

TECHNOLOGY DEPT.

MOTOR AGE

PUBLIC LIBRARY

MAY 3 1946

✓ DETROIT

*Service
Manager*

AUTO
SALES & SERVICE

Radio

Install

Rush

APRIL 1946

Brady

Soft pressure does it . . .

You prolong engine life, step up engine performance and control oil when you install *Soft Pressure Hastings Steel-Vent rings*. With Steel-Vent "motor engineered" sets

you're sure of good results in *any* cylinder condition—whether it's rebores, resleeves or extreme tapers.

HASTINGS MANUFACTURING COMPANY • HASTINGS, MICHIGAN
Hastings Ltd., Toronto



SOFT PRESSURE DOES IT — IN REBORES, TOO

This simple, straightforward statement from a garage foreman truly reflects the satisfaction of Steel-Vent users everywhere: "For the past six years we have used Hastings Steel-Vent sets in our trucks and passenger cars. We find them very satisfactory for stopping oil-pumping *and also in re bore jobs*. We intend to use them, and expect results, in the future as in the past."

HASTINGS STEEL-VENT PISTON RINGS



TOUGH ON OIL-PUMPING GENTLE ON CYLINDER WALLS



19 of the 20 makes of cars
have one or more parts
made by *BORG-WARNER!*

TRANSMISSIONS
TIMING CHAINS
OVERDRIVES
SYNCHRONIZERS
CLUTCHES
UNIVERSAL JOINTS AND
DRIVE SHAFTS
FLUID COUPLINGS
CARBURETERS
RADIATORS
TAPERED WHEEL DISCS



Executive Offices, Chicago. These units form Borg-Warner: BORG & BECK • BORG-WARNER INTERNATIONAL
BORG-WARNER SERVICE PARTS • B-W SUPERCHARGERS, INC. • CALUMET STEEL • DETROIT GEAR • DETROIT VAPOR
STOVE • INGERSOLL STEEL • LONG MANUFACTURING • MARBON • MARVEL-SCHLEBLER CARBURETER • MECHANICS
UNIVERSAL JOINT • MORSE CHAIN • NORGE • NORGE MACHINE PRODUCTS • PESCO PRODUCTS • ROCKFORD CLUTCH
SPRING DIVISION • WARNER AUTOMOTIVE PARTS • WARNER GEAR



HOW TO GET THE MOST OUT OF BETTER FUELS

Most of your customers need a change to "cooler" spark plugs, now that much better fuels and normal driving speeds are back. The plugs that carried through the period of wartime gasolines are usually too "hot" for today. That condition opens a big opportunity to sell more plugs . . . and give better service to customers at the same time.

When you're selling AC Spark Plugs, you can meet that need with *precision*. The AC Heat Range assures a type of plug to fit all engine operating conditions *and* all fuels—*exactly*.

Take advantage of this big, double opportunity. Check the Heat Range of all plugs when you're checking oil, lubricating the car, washing it, or servicing. When you find plugs that should be changed, recommend a new set of AC Spark Plugs—the plugs that were factory equipment on more than 2 out of every 4 new cars and trucks built since 1932.

SEND FOR AC SHOP MANUALS

Field Service Dept., AC Spark Plug Division, G. M. Corp.
910 Mott Foundation Building, Flint 3, Michigan
Gentlemen: Please send at once, no charge, the AC Shop Manuals checked:

- | | |
|--|--|
| <input type="checkbox"/> HOW TO SERVICE SPARK PLUGS | <input type="checkbox"/> How to Service Fuel Pumps |
| <input type="checkbox"/> How to Service Spark Plug Cleaner | <input type="checkbox"/> How to Service Air Cleaners |
| <input type="checkbox"/> How to Service Oil Filters | <input type="checkbox"/> How to Service Speedometers |
| <input type="checkbox"/> How to Service Ammeters and other Instruments | |

MA-4

NAME _____

FIRM _____

STREET ADDRESS _____

CITY _____

STATE _____

SPARK PLUGS

**FOR
LEAK-PROOF, PRESSURE-TIGHT
ASSEMBLIES**



**USE PERMATEX FORM-A-GASKET
on NEW gaskets...and on OLD gaskets!**

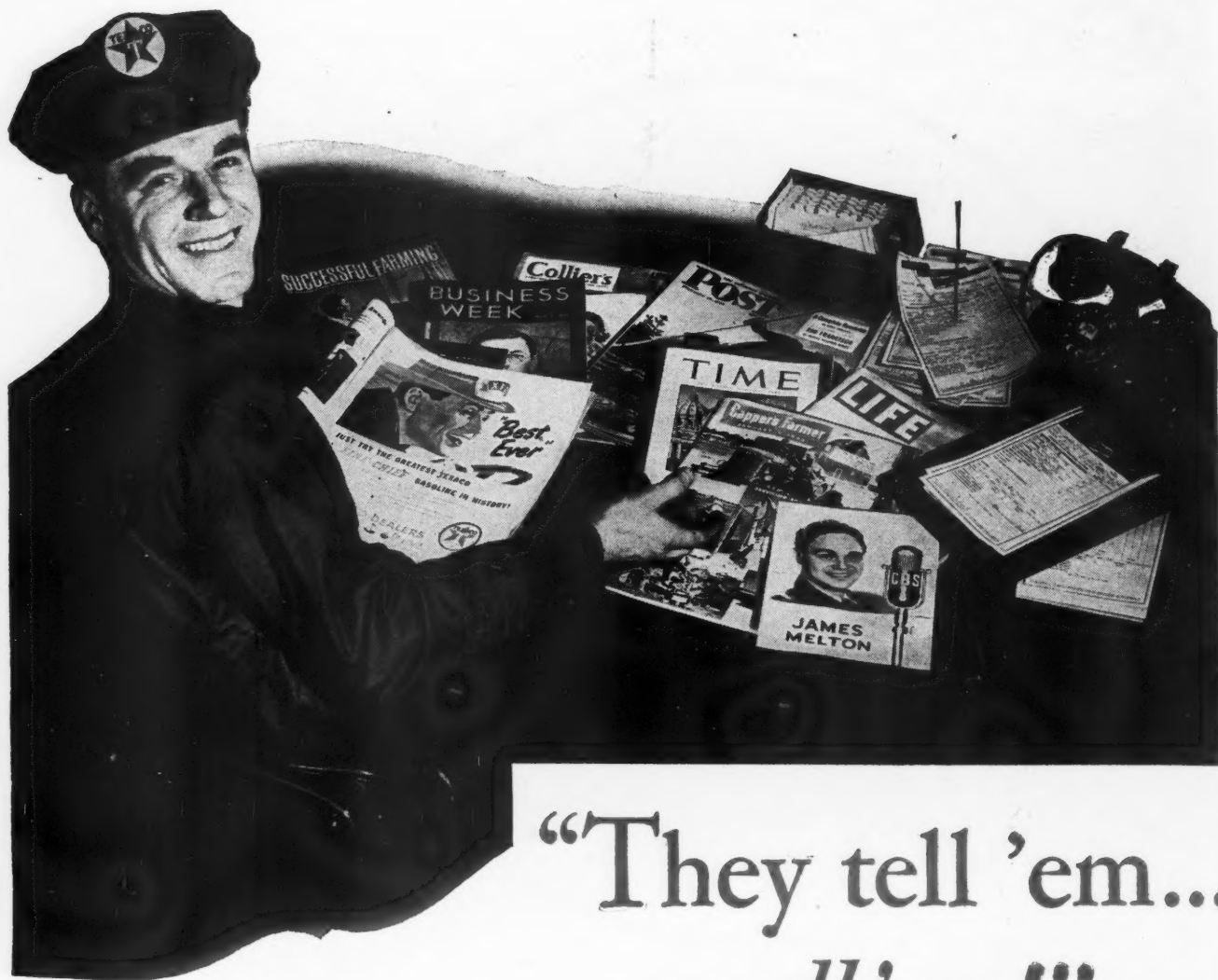
Form-A-Gasket No. 1 (a paste) sets fast but not too fast for use on large surfaces. It dries hard but never becomes brittle. It's a swell product for making pressure-tight, leak-proof, permanent unions even when surfaces are warped.

Form-A-Gasket No. 2 (a paste) sets a little slower than No. 1. It dries to a tough, pliable layer with plenty of "cushion". It resists high pressures and very readily disassembles.

Aviation Form-A-Gasket No. 3 (a heavy, brushable liquid) sets itself into position and dries to a tacky paste. It will not run even when heated to 400° F. Nor will it become hard or brittle at temperatures down to 70° below zero. It's a great, all-around product!

**ALL TYPES OF FORM-A-GASKET
PRESERVE ALL TYPES OF GASKETS!**

**PERMATEX COMPANY, INC.
BROOKLYN 29, N. Y., U. S. A.**



“They tell ’em...
we sell ’em!”

TEXACO DEALERS have the backing of a powerful lot of advertising in leading magazines and farm journals . . . plus the popular Texaco Star Theatre radio program starring James Melton and Ed Wynn on a nation-wide hook-up every Sunday night . . . thousands of billboards from coast to coast . . . and a wide variety of localized dealer sales material.

This helps to keep millions of car owners sold on Texaco Dealers and Texaco petroleum products. Just one of the many reasons why *Texaco Dealers are busy dealers!*

THE TEXAS COMPANY



*A Great Line-up
for
TEXACO DEALERS*

FIRE-CHIEF and *Sky Chief* GASOLINES
TEXACO and HAVOLINE MOTOR OILS • MARFAK
CHASSIS LUBRICATION • REGISTERED REST ROOMS

**MORE POWER TO YOU
WITH FULL POWER!**



**TOMORROW'S RINGS
TODAY**

*A different type ring
for each groove — each
ring has its job and does
it — delivers FULL POWER.*



When you install Moog X-Plus Piston Rings you give your customers **FULL POWER** results. That means more power to you in your business — more success — more satisfied customers. The modern new style design of X-Plus is a business builder that is geared to 1946 methods.

Write us for the FULL POWER Story today.

MOOG INDUSTRIES, INC.
 MOOG PISTON RING CO. ST. LOUIS SPRING CO.
 MOOG COIL ACTION PARTS COMPANY
 General Offices: 822 EASTON AVE., ST. LOUIS 14, MO.
 Branches in principal cities



● The days of "creep-under-crawl-out" service are over. No longer can a shop that *works on its back* compete effectively with a shop that *stands on its feet*!

Not only has the use of a lift for mechanical service proven its value as a time-saver—with actual savings from 20% to 65% depending upon the operation—but it has proven its value in every phase of profitable shop operation . . . better workmanship . . . reduction of lost time due to fatigue and accidents . . . increase in the number and size of jobs handled . . . increased customer confidence and shop prestige . . . and the attracting and holding of better mechanics.

The reason is obvious. Men can work more effectively in a comfortable, natural, upright position. There are fewer colds, backaches and cramps . . . less danger from accidents . . . more room. The mechanics and the operator make more money because they can do better work—faster.

Yes! The days of "creep-under-crawl-out" service are over! Modern service requirements demand a lift with an "open work zone" . . . A lift that provides an adequate, comfortable, safe, working space beneath the car *free from unnecessary obstructions* . . . A lift that is "open for business"—A Walker Electric Lift.

WALKER MANUFACTURING COMPANY OF WISCONSIN, RACINE, WISCONSIN

Also Makers of Walker Jacks and Exhaust Silencers

LEARN THE LESSON OF A MODERN LIFT FOR MODERN SERVICE—NOW!



This is not a picture of an efficient, happy mechanic. Cramped, unnatural working conditions . . . cold, damp, exposed to accidents and injury. Lost time would pay for a lift.



What a contrast! Here the mechanic works in a healthy, comfortable, upright position. All under-car parts easy to reach, quickly and profitably. Physical exertion reduced to a minimum.

Walker

ELECTRIC LIFT...

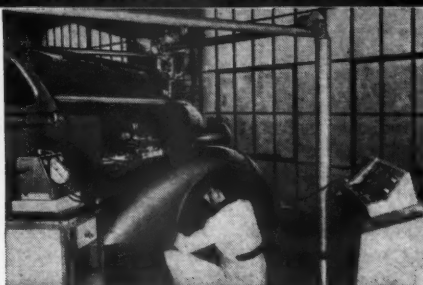
THE

Service Requirements a Lift with an "Open Work Zone"

THINK OF THESE IMPORTANT THINGS WHEN YOU CONSIDER BUYING A LIFT



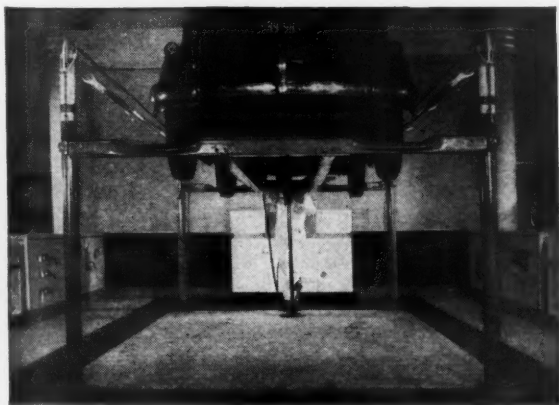
There are no blind spots beneath a Walker "open work zone" Electric Lift. The floor is clear of obstructions—the job is open above. Full freedom for unrestricted use of hands and body pays dividends in better and faster work.



A Walker Lift permits the mechanic to raise the job to any convenient working height from a few inches to full 5 feet. He adjusts the job to his convenience . . . not vice versa. In a few seconds it's up in the air and ready for work.



Walker Lifts sell service, too. Mechanics can inspect, diagnose and report needed service more easily standing than flat on their backs. Owners can be shown the things wrong under the car—and seeing is selling.



Here is the modern lift . . . designed in every detail to the needs of today's service. Easy to install . . . easy to move . . . economical to operate . . . free from all obstructions above and below. The lift with the "open work zone" . . . The Walker Electric Lift.

*TIME SAVINGS ON A FEW IMPORTANT JOBS DONE ON A WALKER ELECTRIC LIFT

| | |
|---------------------------------------|--------|
| Brakes, overhaul | 30-50% |
| Clutch and Flywheel, remove | 20-30% |
| Differential, overhaul | 20-25% |
| Exhaust System, repair | 30-50% |
| Hand Brake, relining | 30-40% |
| Oil Pan, remove | 30-40% |
| Propeller Shaft, remove | 20-30% |
| Shock Absorbers, service | 30-50% |
| Starter, remove | 20-30% |
| Steering Linkage, adjust | 30-50% |
| Transmission, remove | 30-50% |
| Underbody, tighten | 20-25% |
| Universal Joint, remove | 25-40% |
| Tires, switch | 50-65% |

* Figures through Courtesy of "MOTOR"

LIFT THAT IS OPEN FOR BUSINESS

IT MEANS PLENTY TO HAVE A **PEDRICK** **FRANCHISE**

PLENTY of top-performing, trouble-free Engineered Sets for cars, trucks and tractors.

PLENTY of protection in the industry's most liberal ring-and-labor guarantee.

PLENTY of merchandising help to draw customers to your shop . . . wall banner, window sign, Franchise Certificate, dashboard stickers, mailing cards, newspaper mats, movie slides . . . all planned for coordinated sales promotion and shop identification.

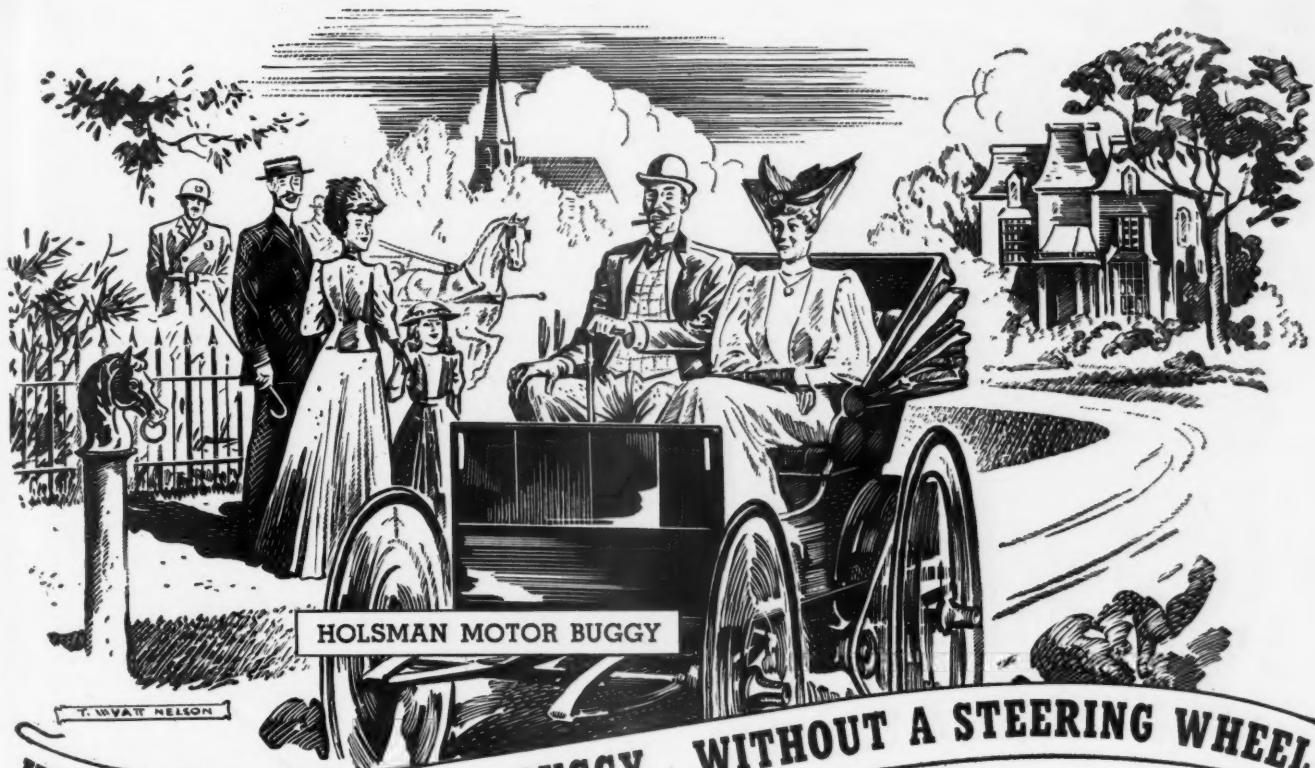
PLENTY of publication advertising to make the most important vehicle owners familiar with the merits of Pedrick Piston Rings . . . advertising that you tie in with by using the Pedrick Franchise program.

Here's an abundance of what it takes to keep a business out in front in volume, in profit, in service to vehicle owners in these great post-war years . . . the abundance which is the PEDRICK Franchise means plenty! Ask the Pedrick distributor nearest you, or write to WILKENING MANUFACTURING Co., Philadelphia 42, Pa. In Canada: Wilkening Manufacturing Co. (Canada) Ltd., Toronto.

Pedrick
ENGINEERED SETS OF
precisioneered PISTON RINGS



These are just a few samples of the material Pedrick makes available to advertise your shop locally. In addition, Pedrick rings are backed by powerful advertising in 32 different publications, including TIME MAGAZINE.



AS late as October, 1908, an automobile manufacturer contended that "all roads are made to be traveled by high wheels" and built his autos accordingly. But time proceeded to evolve the type of car that suits the modern need. And the modern car's sensitive throttle is best served by the responsive functioning of . . .



Assembled
with AIRTEX Diaphragms,
Guaranteed for 50,000 MILES

AIRTEX

Factory Tested

FUEL PUMPS



"AIRY" TEX

The purity and high quality of the alloy used in AIRTEX cover and body castings prevent warpage and assure uniformity, accuracy and lasting strength. Our modern high pressure casting machines prevent porous castings. All other parts are made with the same thorough care, tolerances on some parts must be as close as one to two thousandths of an inch. All parts are assembled accurately, carefully inspected and the diaphragm assembly is tested for absolute gas-tightness.

"Your profits climb with the AIRTEX Line"

AIRTEX AUTOMOTIVE CORPORATION, FAIRFIELD, ILL.





Well Worth Waiting For!

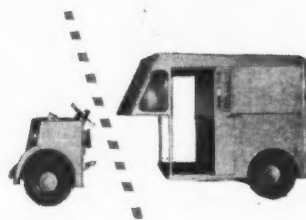
Marmon-Herrington's new DELIVR-ALL is the talk of the trade. And little wonder! For DELIVR-ALL is an entirely *new kind* of vehicle—everything you ever hoped for in a delivery truck . . . *and more.*

Designed specifically for frequent-stop delivery service, DELIVR-ALL has a detachable and interchangeable front-wheel-drive power unit that eliminates rear axle, drive shaft and frame. The result is a short-wheelbase truck with a low, wide, unencumbered floor and the highest possible ratio of cubic capacity to wheelbase. Operated with equal facility from either standing or seated position, driver fatigue is substantially reduced, speed and efficiency of service importantly increased.

We hope soon to be building sufficient DELIVR-ALLS to meet the already heavy demand. Meanwhile, we suggest it will pay you well to hold off buying new delivery equipment until DELIVR-ALLS are available. For complete information, see any Marmon-Herrington dealer, or write us for illustrated literature.



Low, wide, unencumbered floor, from front to back—Extra wide doors—Large cubic load capacity.



Detachable and interchangeable front-wheel-drive power unit, for easy servicing and preventive maintenance.



MARMON-HERRINGTON COMPANY, INC. • INDIANAPOLIS 7, INDIANA



Get more power from
ETHYL by setting the
timing for best performance!

ETHYL CORPORATION, Chrysler Building, New York 17, N. Y.

Manufacturer of Ethyl fluid used by oil companies to improve the antiknock quality of aviation and motor gasoline

APRIL, 1946

When writing to advertisers please mention Motor Age

11

Another AUTO-LITE

Collier's
POPULAR SCIENCE
POPULAR MECHANICS
Life
SOUTHERN AGRICULTURE
Farm Journal
Progressive Farmer
SUCCESSFUL FARMING

THE AMERICAN WEEKLY
The Detroit News
PICTORIAL
PICTURES
Minneapolis Sunday Tribune
The St. Paul Pioneer Press
The Register
The Atlanta Journal
The Atlanta Magazine

"Switch to Auto-Lite Spark Plugs"
DICK HAYMES

"They make sweet music in any engine"
HELEN FORREST

"Ignition Engineering helps give economy, too"
GORDON JENKINS

Tune in the Dick Haymes Show with Helen Forrest, Gordon Jenkins' Orchestra and Chorus • Every Saturday Night, 8:00 P. M. - E. S. T. on CBS

AUTO-LITE spark plugs are designed by the same engineers who design complete electrical systems for leading cars and trucks. This specialized engineering experience is one reason why money cannot buy a better spark plug. A complete set of ignition engineered Auto-Lite spark plugs in your car, helps give you quick starts and full mileage from every gallon of gas. So switch to Auto-Lite when faulty spark plugs need replacing. See your friendly Auto-Lite Spark Plug Dealer today.

THE ELECTRIC AUTO-LITE COMPANY
Toledo 1, Ohio
Toronto 1, Ontario

AUTO-LITE SPARK PLUGS
"Ignition Engineered"

Money cannot buy a better Spark Plug

Tune in the Dick Haymes Show Saturdays 8:00 P.M. 149 C.B.S. Stations

AUTO-LITE

FIRST...!



4-color Pages in AMERICAN WEEKLY *and* ROTOGRAVURE

...Tell Your Customer in Your City

New Auto-Lite Spark Plug Campaign Reaches More Than 25,000,000 Readers

NO OTHER SPARK PLUG GIVES YOU ALL THIS

YES, in the country's leading newspapers, in cities, towns and villages coast-to-coast, Auto-Lite is telling your customers that "money cannot buy a better spark plug than Auto-Lite." Big, four-color pages in Sunday papers that pack a real wallop, that reach more than 25,000,000 readers, that will persuade more people than ever before to "Switch to Auto-Lite!"

And there's a special tie-in deal that enables you to get extra benefits from this spectacular LOCAL advertising with ad mats supplied you **FREE!** All this plus network radio, national magazines and farm paper advertising, the exclusive AAA tie-in and sensational dealer helps. For action "Switch to Auto-Lite!" See your jobber or write to

THE ELECTRIC AUTO-LITE COMPANY

Toronto 1, Ontario

Toledo 1, Ohio

SPARK PLUGS

IGNITION ENGINEERED

FREE! SPECIAL TIE-IN AD MATS



Write us for proofs of ads prepared to help you boost business through the Auto-Lite 4-color pages in American Weekly and Rotogravure. Mats are Free.

*"The Finest Balancer
AT ANY PRICE"*

Says MR. FRANK O. SANDERS
HUGHES-LUCAS, INC.
INDIANAPOLIS, IND.

**SCHILDMEIER
SEAL LINE**

"Results," says Mr. Sanders, "have justified our choice of Schildmeier Equipment. We and our customers both consider it the Finest Balancer at Any Price."



WHY IT MAKES YOU MORE MONEY!

- It's FASTER!** More Speed—More PROFIT!
- It's ACCURATE!** Dynamic AND Static Balancing, right the First Time!
- It's FLEXIBLE!** Takes all passenger AND truck wheels.
- It's SIMPLE!** No Instruction Necessary. You can balance 75 to 100 wheels a day with a Schildmeier SEAL LINE!

Complete Literature By Return Mail

REMEMBER SEAL LINE
"The Fastest Thing on Wheels"
Write...
H. C. SCHILDMEIER CO.
312 N. SENATE AVE.
INDIANAPOLIS 2, INDIANA



MOTOR AGE

With Which Is Combined AUTOMOBILE TRADE JOURNAL

FOR AUTOMOTIVE SERVICEMEN

Vol. LXV, No. 5

April, 1946

JULIAN CHASE, Vice-Pres. and Directing Editor
W. K. TOBOLDT, Editor
FRANZ J. SERDAHELY, Managing Editor
J. K. MONTGOMERY, Tech. Editor
HOWARD KOHLBRENNER, Art Director
LEONARD WESTRATE, Detroit News Editor
M. AINSWORTH, Specification Editor
R. RAYMOND KAY, Pacific Coast Editor
J. R. TURNER, Associate Editor
BERNARD L. MILLER, Asst. Editor
JOSEPH GESCHELIN, Detroit Tech. Editor
J. A. LAANSMA, Merchandising Editor
L. W. MOFFETT, Washington Editor
KARL RANNELS, Washington News Editor
E. J. HARDY, Washington News Editor

In This Issue

| | |
|---|--------------|
| News Bulletin | 17 |
| Slants on the News..... | 18 |
| Tuning the 1946 Models | 20 |
| Ignition Trouble-Shooting...by William H. Crouse | 22 |
| NADA Spurs Dealer Discount Battle | 23 |
| Chatter About a Clutch.....by J. Edward Ford | 24 |
| Denver Dealers Have Buying Group by George Feltner | 26 |
| 1946 Oldsmobile Lubrication | 27 |
| New Car Specifications | 28-32; 37-41 |
| Motor Age Picture Gallery | 33 |
| Frank, the Fixer (Cartoon) | 36 |
| Let That Crankcase Breathe!..by Bernard L. Miller | 42 |
| The Motor Age News | 44 |
| Shop Kinks | 46 |
| New Products | 48 |
| Readers' Clearing House | 50 |
| Washington Rulings and Regulations | 96 |
| Legally Speaking | 108 |
| Advertisers' Index | 170 |

Copyright 1946 by Chilton Company (Inc.)

Automotive Division

G. C. BUZBY, President and Manager

E. H. MILLER, Adv. Mgr. E. W. HEVNER, Cir. Mgr.

Offices: Philadelphia 39, Pa.—Chestnut & 56th Sts., Phone Sherwood 1424.
New York 17, N. Y.—100 E. 42nd St., Phone Murray Hill 5-8600. Chicago 1.
Ill.—Room 916 London Guarantee & Accident Bldg., Phone Franklin 4243.
Detroit 2, Mich.—1015 Stephenson Bldg., Phone Madison 2090. Cleveland 14.
Ohio—1030 Guardian Bldg., Phone Cherry 4188. Washington 4, D.C.—1061 National
Press Bldg., Phone District 8109, 8110. San Francisco 5, Cal.—605 Market St.,
Room 708. Phone Douglas 0967. Los Angeles 1, Cal.—6000 Miramonte Blvd.,
Phone Lafayette 5525. Member of Audit Bureau of Circulations. Member of
Associated Business Papers, Inc. Subscription Price: United States and Possessions,
Latin-American Countries, \$2.00 per year; Canada and foreign, \$3.00 per year.
Single copies, 25c.

Owned and Published by

① CHILTON COMPANY (INC.) ①

Executive Offices

Chestnut and 56th Streets, Philadelphia 39, Pa., U.S.A.

Officers and Directors

Jos. S. HILDRETH, President

Vice-Presidents

GEO. H. GRIFFITHS EVERET B. TERHUNE J. H. VAN DEVENTER
C. S. BAUR P. M. FAHRENDORF JULIAN CHASE
WILLIAM A. BARBER, Treasurer JOHN BLAIR MOFFETT, Secretary
THOMAS L. KANE G. C. BUZBY HARRY V. DUFFY
CHARLES J. HEALE

WILLIAM H. VALLAR, Asst. Treas.

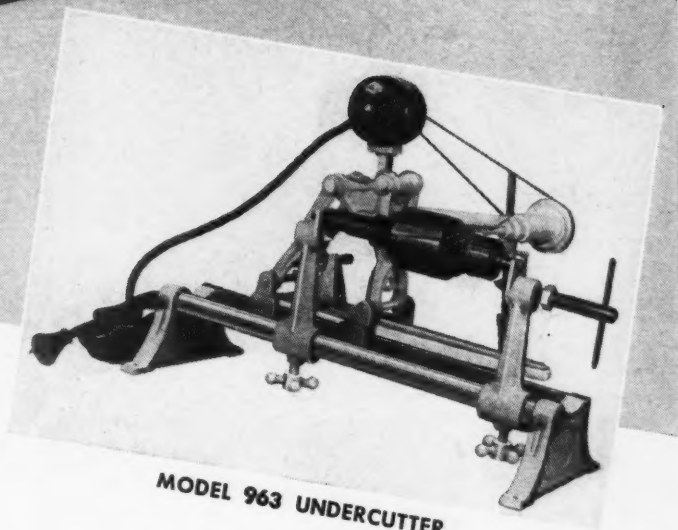
PAUL WOOTON, Washington Member of the Editorial Board

BATTERY & ELECTRICAL TOOLS

... also
Engine Analyzers, Battery
Chargers, Magneto Testers, Test Benches,
Electrical Testing and Service Equipment.



MODEL 701 GROWLER



MODEL 963 UNDERCUTTER

Speed up electrical service with these four pieces of typical equipment in the Weidenhoff B&E line. They'll lick those tough service problems on generators, starting motors, armatures and handle more efficiently those every-day jobs encountered in electrical service.

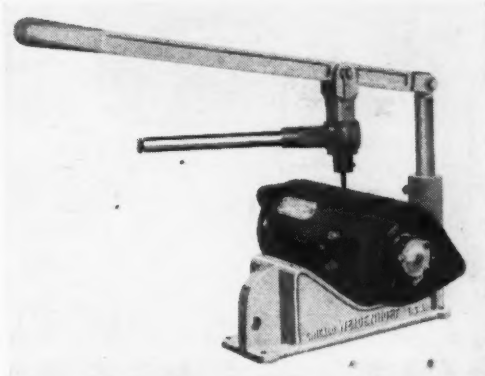
MODEL 701 GROWLER—Double wound meter type. Indicates defective wiring, nature of defect, location of troubles, etc. Handles armatures not possible in other growlers.

MODEL 963 UNDERCUTTER—Heavy duty type. Undercuts commutators up to 6 in. diameter. Centers adjusted to 18 in. Handles all types armatures.

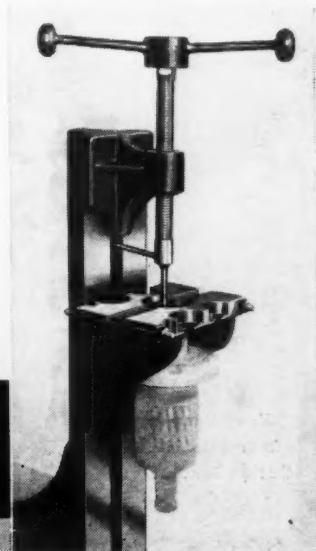
MODEL 973 POLE PIECE SCREW DRIVER—Instantly removes or replaces pole piece screws without damaging parts. Ratchet handle operates right or left. Ruggedly built for hard service.

MODEL 967 PULLER PRESS—Quick acting arbor and puller press for removing and replacing bearings, bushings, races, caps, slip rings, etc. Saves time and prevents breakage.

Weidenhoff equipment is a money-maker in your shop.
Write for information on the complete B & E line.



MODEL 973 POLE PIECE SCREW DRIVER



MODEL 967 PULLER PRESS



JOSEPH
WEIDENHOFF
INC.

CHICAGO 24, ILLINOIS



26

BASIC DESIGNS

of Sealed Power Piston Rings



**INDIVIDUALLY
ENGINEERED**

**Keep Your
War Bonds!
Get \$4 for \$3!**

Oil control is one of the four outstanding advantages you can assure to your customers—along with blow-by control (gas saving), low friction, and minimum wear—when you install Sealed Power Individually Engineered Ring Sets. These sets are developed by Sealed Power engineers from twenty-six (26) basic piston ring designs. Whatever the make, model, or degree of cylinder wear, there's a Sealed Power set specifically engineered to give balanced performance. Sealed Power has been refining these sets for six years, has been producing rings for car, truck and engine manufacturers 34 years. For balanced performance, re-power with Sealed Power motor parts. Sold by America's leading distributors. Sealed Power Corporation, Muskegon, Michigan and Stratford, Ontario.

*Piston Rings, Pistons, Cylinder Sleeves, Piston Pins, Valves, Water Pumps;
Bolts, Bushings, Tie Rods, Front End Parts.*

SEALED POWER PISTON RINGS

BEST IN NEW CARS! ★ BEST IN OLD CARS!

NEWS BULLETIN

Packard has resumed partial production which was halted late in January because of a strike-bound bearing supplier.

★ The House Banking and Currency Committee has adopted an amendment to be attached to the bill extending the life of the O.P.A. This N.A.D.A. sponsored amendment would wipe out existing discount cuts and permit dealers to have six months of normal operation.

Retail sales by chain stores and mail order houses of automotive parts and accessories totaled \$28 million in January, 1946, a decrease of 13 million from the preceding month but a gain of \$8 million from January, 1945.

★ Automotive Engine Rebuilders Association announces that there will be no annual meeting this year. Reason is lack of adequate hotel accommodations. However, the A.S.I. parts and equipment show will be held December 9 to 14, 1946 at the Auditorium in Atlantic City, N. J.

★ Production of Ford cars and trucks since last July has passed the 200,000 mark.

The entire Ford system is now back in operation and Chrysler Corp. discloses it is producing 2300 units a day compared to a prewar output of 6000 cars and trucks.

★ Difficulties in obtaining supplies has caused Kaiser-Frazer to change its policy whereby Willow Run which was originally intended as an assembly plant only, will now be used as a parts plant as well.

★ Textile shortages threaten to wipe out the tire industry's production gains for the first quarter and carry further into next year the day when civilian tires will be in normal supply.

Rubber industry must continue to rely on synthetic rubber for the remainder of the year because of the continued shortage of natural rubber.

Kaiser reports that assembly line was 75 per cent completed in March and that first cars will be completed by mid-summer.

★ Average price of gasoline in 50 representative cities is 20.24 cents representing a decrease of .21 cents from the previous January.

★ Reuther predicted that all difficulties with GM would be settled during the first week in April.

★ New O.P.A. procedure has been set for parts manufacturers making it possible for them to apply for a blanket increase, or an increase on a single item.

George Keller, formerly of Studebaker, has been named executive Vice-President of the Bobbi Motor Car Corp.

★ First effect of the soft coal strike will be on the steel industry and then of the auto makers. Most industrial consumers, are believed to have one month's supply on hand.



Lightweight Models Under Development

AT least four automobile manufacturers are known to be working on some kind of lightweight automobile. Ford and Chevrolet have publicly announced that they have such cars under development, and Chrysler and Studebaker are known to be working on lightweight models. It is felt in Detroit that the cars may be intended primarily for foreign markets, where they probably would have better acceptance than in this country. If the price of cars should increase greatly in price, however, the lower-cost models might have a place.

Veterans Show Interest In Retail Store Business

ON checking 6540 inquiries received from veterans the Department of Commerce found that 95 or 1.4 per cent were interested in starting an automotive repair shop; 54, or .82 per cent wanted information on parts jobbing business; while 25, or .38 per cent were considering the parking lot or garage business. First, second and third on the list were electrical appliance stores, apparel shops and filling stations with 10, 3.8 and 3.6 per cent respectively.

Based on these letters and other experience, the Department is convinced that the number of retail and service stores will return to prewar and perhaps higher levels. A preliminary estimate made in September reveals a 12-month increase of retail stores of more than 100,000 and service shops of more than 25,000, but the figure is still far behind the 1941 total.

GM Calls Back All Production Workers

WHILE waiting for the UAW to meet all the terms of the strike agreement and have all employees return to work, GM has called back all production workers in order to get a flying start on building new cars. Altogether 59 locals have signified their desire to return to work, with 19 others still holding out.

Auto Industry Watching Coal Strike Developments

THE automotive industry is watching developments arising from the NLRB decision in the coal industry which holds that foremen and supervisory employees may affiliate with production unions for purposes of collective bargaining. The coal industry has announced that it will fight the decision in the courts and will call on Congress to "rectify the mistake made by NLRB." The decision was a reversal of the board's ruling in the Maryland Drydock Co. case in 1943, and even goes beyond the decision in the Packard case, when it ruled that foremen could affiliate with independent unions not connected with production employees' unions. Packard has appealed the decision, and the case is on the docket in the Federal Court of Appeals in Cincinnati.

10 pages of tune-up and technical specifications are included in this issue of Motor Age. Prepared by Motor Age's Specification editor, they contain the latest data on the 1946 passenger car models. Save and file the specs for use as needed.

AMA Trade Program Would Increase Production

THE Automobile Manufacturers Association has presented to Congress 18 recommendations designed to increase exports and imports under the reciprocal trade policy. Their program called for the elimination of restrictive tariffs and quotas and other regulations tending to erect artificial barriers to the free movement of trade. If successful such a program should aid materially in reducing the price of cars, as production would be materially increased.

Will Bowles Soften Present Price Policy?

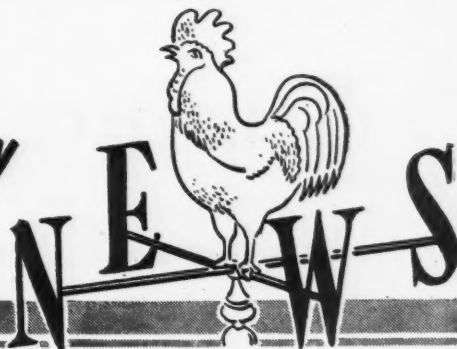
CRITICAL observers in Detroit feel that Chester Bowles may soften his price policy, pointing out the C.P.A. has directly requested a boost in the price of grey iron and malleable castings. Increases have already been won by plywood, lumber, soil pipe, cotton textiles and galvanized steel sheet and naturally, the immediate result would be to break the bottleneck of production.

Studebaker Set to Start Production on Commander

PRODUCTION of 1947 Studebaker passenger car models will start within 30 days, it was announced by Paul G. Hoffman, president of the company. The statement applies to both Champion and Commander models, and added that the new cars involve more than minor design and mechanical changes. As a result of the changeover, passenger car manufacture has been temporarily suspended.

SLANTS ON

THE



Detroit to Honor Auto Industry Pioneers

DETROIT will mark 50 years of progress in the automobile industry this year with a Golden Jubilee celebration. In addition to a formal recognition of the event, sponsored by the Automobile Manufacturers Assn., a series of commemorative programs will be held by groups in various parts of the country, according to George W. Mason, president of AMA. The Detroit program will include the honoring of pioneers in the industry, and an automobile exhibit in Detroit June 1-8 in connection. The show will include cars ranging from the most ancient vintage obtainable to the latest models. The display is being called an automotive progress exhibit, rather than an automobile show, since it reveals the progress of more than five decades in automobile design.

Another Entry in Auto Field Is Reported

ANOTHER entry into the automobile field is reported from Cincinnati. According to information available, the car will be a three-wheeled vehicle powered by a 10 hp. two-cylinder engine mounted in the rear. The motor is said to be easily changed for repair purposes. Aimed at the lowest price field, the car is said to be in the \$450 price class and to have a speed of 45 to 50 miles per gallon. It is expected to give 65 to 70 miles per gallon of gasoline.

Manufacturer of the small car, which is yet unnamed, is reported to be the B & B Specialty Co.

Truck Production Outlook Extremely Uncertain

AS official Washington views the overall supply situation, the outlook for greatly expanded truck production is extremely uncertain. Truck production in February totaled 28,692 units, including 98 trucks for the military and 641 for the Chinese government, the lowest obtained in any month since Pearl Harbor. While there is little doubt that production will increase during the coming months, the Civilian Production Administration will not make any forecasts for at least another 30 days due to the many variable factors in the supply situation.

CPA is not unduly pessimistic, but is quick to point out that there is little justification for the optimistic predictions of the manufacturers. Industry forecasts have been overshooting actual production by wide margins, and are considerably higher than the totals expected by CPA for the next few months.

The industry hopes to reach a monthly output of 125,000 units by June, and expects to turn out 1,000,000 commercial vehicles by the end of the year. CPA says this production won't materialize, and expects total production for the year to be closer to 880,000 units.

February commercial output of 14,244 lights, 9,880 mediums, 2,652 light-heavies, and 1,177 heavy-

The Dealer Discount Battle moved up another round when President W. L. Mallon appeared for the House Banking and Currency Committee and presented a lengthy statement on the many miscalculations perpetrated by OPA. Read the article on page 23 of this month's Motor Age for a full account on this situation.

heavies was about one-half the January total, due primarily to the steel strike and the GM shutdown. The settlement of these strikes will mean some increase in production; March totals are expected to show an increase of more than 25,000 units over February.

Introduction of 1947 Models Unlikely This Year

CANCELLATION of plans for the 1947 National Automobile Show in New York lends weight to reports circulating in Detroit that the major automobile manufacturers do not plan to introduce 1947 models this year. Company officials will not comment on the possibility, but general opinion is that, with production so slow to get into volume, most companies will not want to shut down long enough for the model changeover. One official points out that his company has enough orders on hand to last the rest of this year if production does not gain any faster than it has to date. This does not mean that there will be no 1947 models introduced this year, but those that do appear are very likely to be lines that have not appeared before as 1946 models.

High Tire Production Predicted by Collyer

GOODRICH'S Collyer is authority for the statement that tire production and crude rubber consumption will be larger than ever before this year and that the industry will turn out 70 million tires this year. That's approximately three tires for each vehicle and on that basis production should soon catch up with the demand.

Tuning the 1946 Models

Study this article and the specifications on pages 28 to 32 and 37 to 41 carefully

GETTING all the snap, and what the salesmen call "vibrationless performance," that the engineers build into a job is a tough proposition at any time but if you don't have the right specifications and tune-up data, it's just about impossible. That's why MOTOR AGE editors made a special trip to Detroit to get the low-down on what makes the new jobs tick. There are a lot of people who believe that the new cars are just the same as the 1942 jobs. But that is the same as saying a horse and a dog are just the same because they both have four legs. Setting plug gaps to .025 when they should be .040 won't help an engine idle, neither will 3/16 in. toe-in cut down tire wear if the correct setting is 1/8 in.

It's true that in most cases there isn't any tremendous differences in the new cars, compared to what the factories offered in 1942, but it's a cinch that you can't use pre-war tune-up specifications when you start working on one of the post-war cars.

Take, for instance, the spark plugs. In 1942 Ford products—Ford, Mercury and Lincoln, all used Champion H-9 plugs. In today's cars, you will find H-10s—gaps remain unchanged at .025 in. Several of General Motors cars, Buick, and Olds have shifted to AC type 48, while Chevrolet is using the AC M8. At the time of going to press none of the Chrysler-made cars had announced the types of plugs they were planning to use; however, as in the past, they will be of Auto-Lite manufacture.

When shooting trouble, it's particularly important to

keep one eye on the spec table because of the big changes made in compression pressures. In 1942, Ford compression ratio on the V-8 was 6.20 to 1, which resulted in compression pressures at idling speed of 100 lb. In the new jobs the ratio was jumped to 6.75 to 1 and the pressure is 160 lb. And that holds good for the Mercury, too. It's interesting to note that on Chrysler and DeSoto there has been no increase in compression ratio, but somehow they have increased compression pressure by 5 lb. That could result from a slightly higher idling speed or changes in manifolding. Valves and timing are the same as before.

It's interesting to note that Plymouth now has a compression ratio of 6.60 to 1 with a pressure of 120 lb. In 1942 the ratio was 6.8 to 1 and the compression pressure was 125 lb. Nash on both their sixes made a slight change in compression ratio, but the specs don't show a corresponding change in pressure.

There is a major change in valve timing on both the Nash jobs. The intakes don't stay open as long as formerly but the exhaust stays open longer—result better burning of fuel and improved scavenging. On the Model 4640, the intake valve opens at 6 degrees before top center, and the exhaust closed 10 degrees after top center. On the larger six, the intake valve opens 24 1/3 degrees before top center and the exhaust closes 5.1 degrees after top center. Incidentally, the change also boosted horsepower from 75 to 82 in the case of the Ambassador 600 and from 105 to 112 on the Ambassador Six.

A lot of changes have been made in the carburetor set-up. Chevrolet, Nash Ambassador, Studebaker Champion and both Pontiac jobs are sporting new Carter carburetors. Chevrolet has a W1-574S, the Nash Ambassador a WA1-611S, the Studebaker Champion a WE-532S, while a WA1-537S and a WDO-548S are used on the Pontiac Six and Eight, respectively. Adjusting instructions remain about the same for the respective types.

On Pontiac, DeSoto and Plymouth, don't make the mis-





They supply the data needed to get best performance and economy from the new cars



take of setting the ignition the same as on the 1942 models or the customer will raise several different brands of hell. Points on both Pontiac models are now set at .020 in. gap. Preceding models were set at .021 in. for the Six and .015 in. for the Eight. On the DeSoto points now open at TC compared to 4 degrees after top center. Plymouth had a somewhat similar change. On the 1942 model, distributor points opened 3 degrees before top center while today's are set to open at T.C.

When it comes to wheel alignment most engineers made no changes. However, on the Nash Ambassador Six which has a completely new front end system, the caster is now $\frac{1}{4}$ to $\frac{3}{4}$ degrees, camber is $\frac{1}{4}$ to $\frac{3}{4}$ degrees and toe-in is $\frac{1}{8}$ to $\frac{3}{16}$ in. On the Pontiac, previous models had the camber at zero to 1 degree, while the new jobs should be set at $\frac{1}{4}$ positive to $\frac{1}{4}$ degree negative.

Of course, tappet clearances are one of the most important parts of a tune-up job and only on the Nash Ambassador Six is there a change and that only a small one. Formerly both intake and exhaust were set at .015 in. On today's car the tappets should be set .015 in. for the intake and .018 in. for the exhaust.

While it will be a long while before new rings are installed in any of the 1946 engines, it is important to note that both Ford and Mercury now carry two oil rings on each piston instead of one as heretofore. This should

result in improved oil consumption. Another change made by Ford in both of these engines is in the piston material. Formerly cast steel was used, but the new engines are fitted with aluminum. Another car to adopt aluminum for its piston is Buick; however, there is no change in the number of rings as the new pistons are using four rings as in the past.

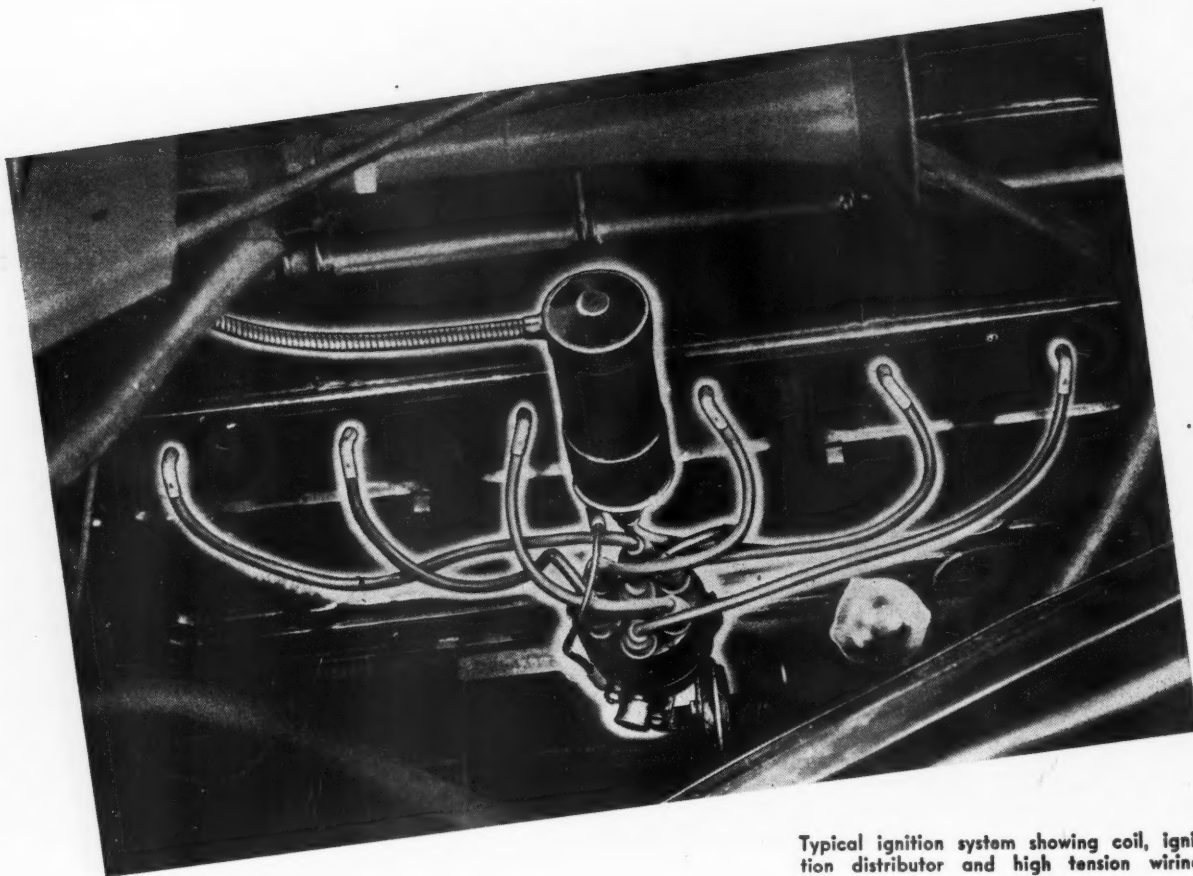
To return to the Ford—the oil rings are .1547 in. wide while the compression rings are .0917 in. wide. Gaps of both oil and compression rings should be .014 in.

As mentioned in previous articles in MOTOR AGE, Chrysler, Dodge, DeSoto and Plymouth are now fitted with two piston hydraulic brakes, similar to those found on the large Chryslers before the war. Detailed adjusting procedure was given in the March issue of MOTOR AGE.

There are few changes in routine lubrication procedure, the new models being very much like their predecessors in that respect. Capacities of both the rear axles and transmissions remain, for the most part, unchanged, with S.A.E. 90 extreme pressure lubricant being used in most of the transmissions and S.A.E. 90 hypoid lubricant being specified for most of the rear axles. Crankcase oil capacities are also about the same as before. Of course, before doing a lube job on any of the new cars, the diagrams which are being carried each month in MOTOR AGE should be studied for quantity and type of lubricant.

By BILL TOBOLDT





Typical ignition system showing coil, ignition distributor and high tension wiring

Ignition Trouble-Shooting

How to put your finger on the cause of the trouble and how to correct properly **By WILLIAM H. CROUSE**

THE ignition system has the job of making sparks and delivering them to the proper spark plugs at the proper instant. If the sparks are not "big" enough, or if they do not arrive at the proper instant, it is the serviceman's job to "adjust" the sparks, and this adjustment is one part of the ignition maintenance procedure.

Actually, there are two parts to the job, trouble-shooting to put your finger on the cause of trouble and doing what is necessary to correct the trouble. Failure of the ignition system to perform normally can usually be traced down to any one of three basic causes, loss of energy in the primary, loss of energy in the secondary, or wrong timing. Various conditions that might produce any of these three basic troubles are:

(1) Loss of Energy in the Primary Circuit.

(a) Resistance in circuit due to loose connections, defective leads, burned contact points or ignition switch contacts, open or partially open ignition coil primary winding.

(b) Condenser defective; shorted, low insulation resistance, high series resistance.

- (c) Discharged battery.
- (d) Grounded primary circuit in coil, wiring or distributor terminal.
- (2) Loss of Energy in Secondary Circuit.
 - (a) Defective high tension wiring.
 - (b) Defective connections in high tension circuit.
 - (c) Plugs fouled, cracked, or out of adjustment.
 - (d) High tension leakage across coil head, distributor cap or rotor.
 - (e) Defective ignition coil—shorted primary or secondary turns, open or grounded secondary.
- (3) Out of Time.
 - (a) Timing off.
 - (b) Centrifugal advance defective.
 - (c) Vacuum advance defective.
 - (d) Bearing or shaft worn, or shaft bent.
 - (e) Dual points not synchronized.

QUICK CHECKS

There are certain quick checks that can be made which
(Continued on page 62)

N A D A

Spurs Dealer Discount Battle

NADA President W. L. Mallon tells House Banking and Currency Committee about OPA's bungling

WORKERS get more money with OPA approval—the manufacturers get more money with OPA approval—the car buyer gets prices practically on a 1942 basis with OPA approval—and the dealer gets cuts in his future income with enthusiastic OPA approval. Today, the automobile dealer faces the future with uncertainty, wondering what Administrator Bowles will do next in the perplexing dealer discount battle.

OPA, under the guidance of Mr. Bowles, has bluntly informed dealers that they may expect to be compelled to pay the entire wage increases won by CIO factory workers in their recent strikes. The increases will be \$80 million a year, more than \$5 and one-half million more than all of the dealers in the United States who pay Federal income taxes netted during 1941. The strike is over, but

the dealers are paying the wage increases won by the unions, and according to OPA this is 2 per cent which is of course added to the discount cuts made previously. Altogether dealer profit reductions have been scaled down 7½ per cent as a result of OPA regulations according to the NADA. OPA officials simply said the dealers would have to take the rap, and that was that.

But are dealers lying down quietly absorbing each slash OPA invokes? They are not. NADA's president W. L. Mallon presented a full statement to the House Banking and Currency Committee on March 28, in this latest move of the dealer discount battle. A lot of erroneous impressions publicized by OPA were corrected by Mallon in his address.

In an effort to preserve the established trade discount of 24 per cent, NADA has suggested that the following amendments be made to present regulations be made:

1. Amend Section 2(h) so that neither OPA nor any other government agency may change standard trade practices such as the dealer handling charge and all such changes of this nature previously made by OPA shall be declared null and void.

2. Amend Section 2(h) so that neither OPA nor any other government agency may change established cost practices and trade discounts and that all such actions previously taken shall be declared null and void.

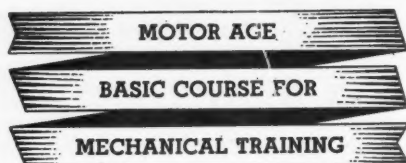
3. Amend the existing law so that all price controls in a given industry shall be automatically lifted, without the necessity of obtaining the consent of OPA, upon production in the individual industry reaching 75 per cent of the average normal production for the years that may be adopted as the base period. The advisory committee or committees of the respective industry to certify and support by evidence the fact that the required production levels have been reached.

4. Incorporate in the existing law the provision that all OPA instituted controls and change whatsoever in normal methods of

(Continued on page 64)



"Another thing I'm going to demand is cash commissions on accessory sales. No more Wilkie buttons, 'Oh, you kid' pins, or even a chicken inspector's badge for pay!"



CHATTER about a CLUTCH

**A clutch problem starts Pop O'Neill grabbing for air
when one of his boys accepts a customer's diagnosis
in the 50th article of this popular Motor Age series**

BY J. EDWARD FORD

IT was past nine when Pop O'Neill got down to the shop. He had driven over to Capitol City the day before to see the new models of a popular-priced car. After the show, a fast-talking factory man entertained a group of prospective dealers and tried hard to get Pop to take the Glenrock franchise. So this morning Pop was a bit weary and took his time about going to work. Instead of driving into the shop as he usually did, he parked on the street and slipped in the front door of the office. But the effort was wasted. Tommy Winters was in the office, looking up a phone number.

"Morning, Tommy," said Pop briskly, tossing his hat onto a wall peg and starting to shed his coat.

"I was just going to call you," said Tommy. "Larry was beginning to worry about whether you'd be in today."

"Mighty nice of him," Pop said curtly. "I've done the same thing for him hundreds of times."

"Have a good time at the show?" asked Tommy.

"Yes and no. The new cars were okay—but I sure got my ears bent by that super salesman."

"Trying to sell you a car?"

"No—a dealership," Pop said in a casual tone.

"Hubba, hubba!" Tommy exclaimed.

Pop looked at him sharply.

"I mean that would be solid," explained Tommy.

"Oh," Pop remarked, trying to look as if he understood. "Lots of guys do all right sellin' cars."

He buttoned up his coveralls, went over to the desk and started to shuffle the morning's mail.

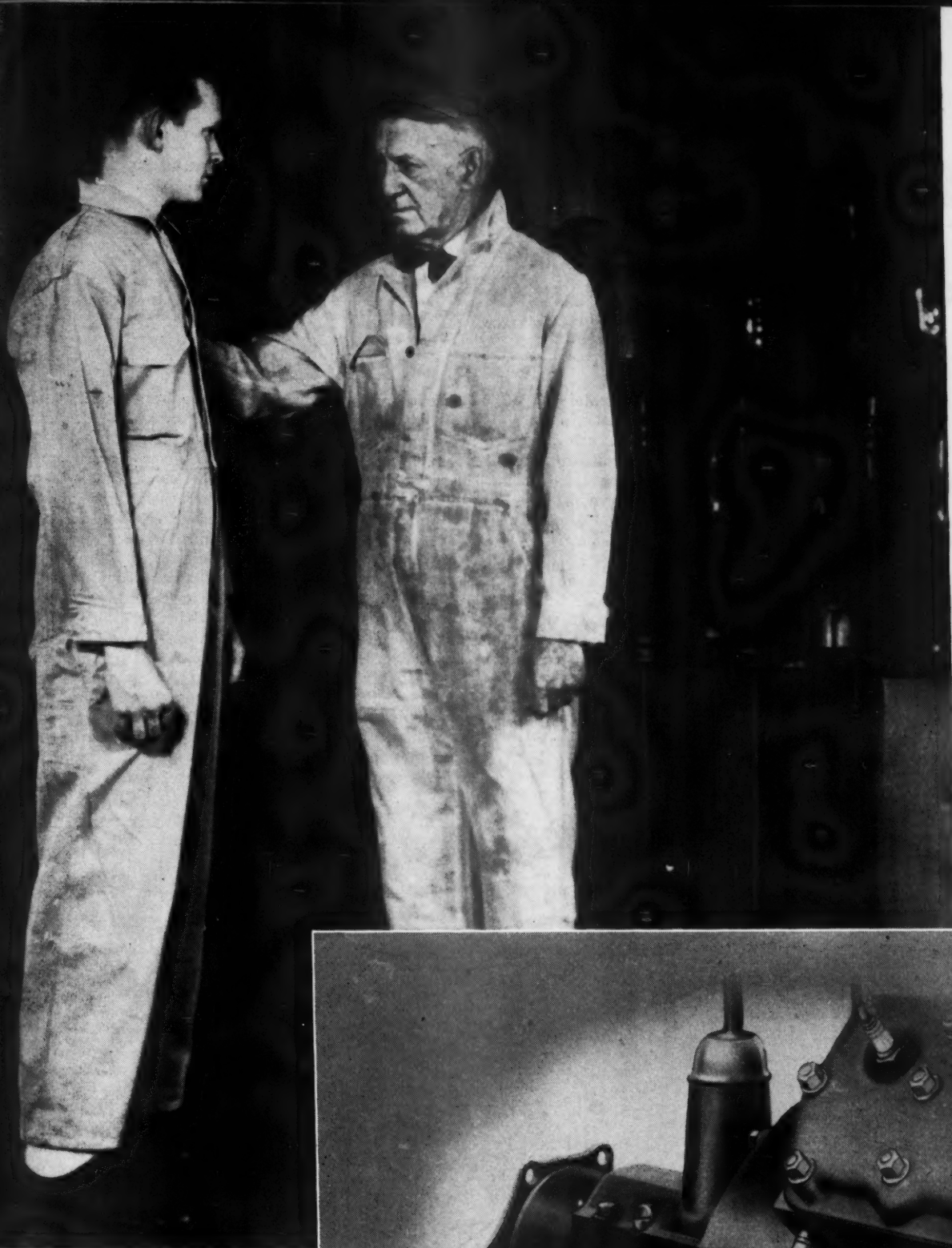
"Anything new while I been away?" he asked.

"We've got an awful lot of work. Larry says he doesn't know how we're ever going to get it out."

Pop chuckled. "If I ever have an army that has to get across a river in a hurry, the man I'll put in command of it will be Larry. He can cross his bridges before they're even built."

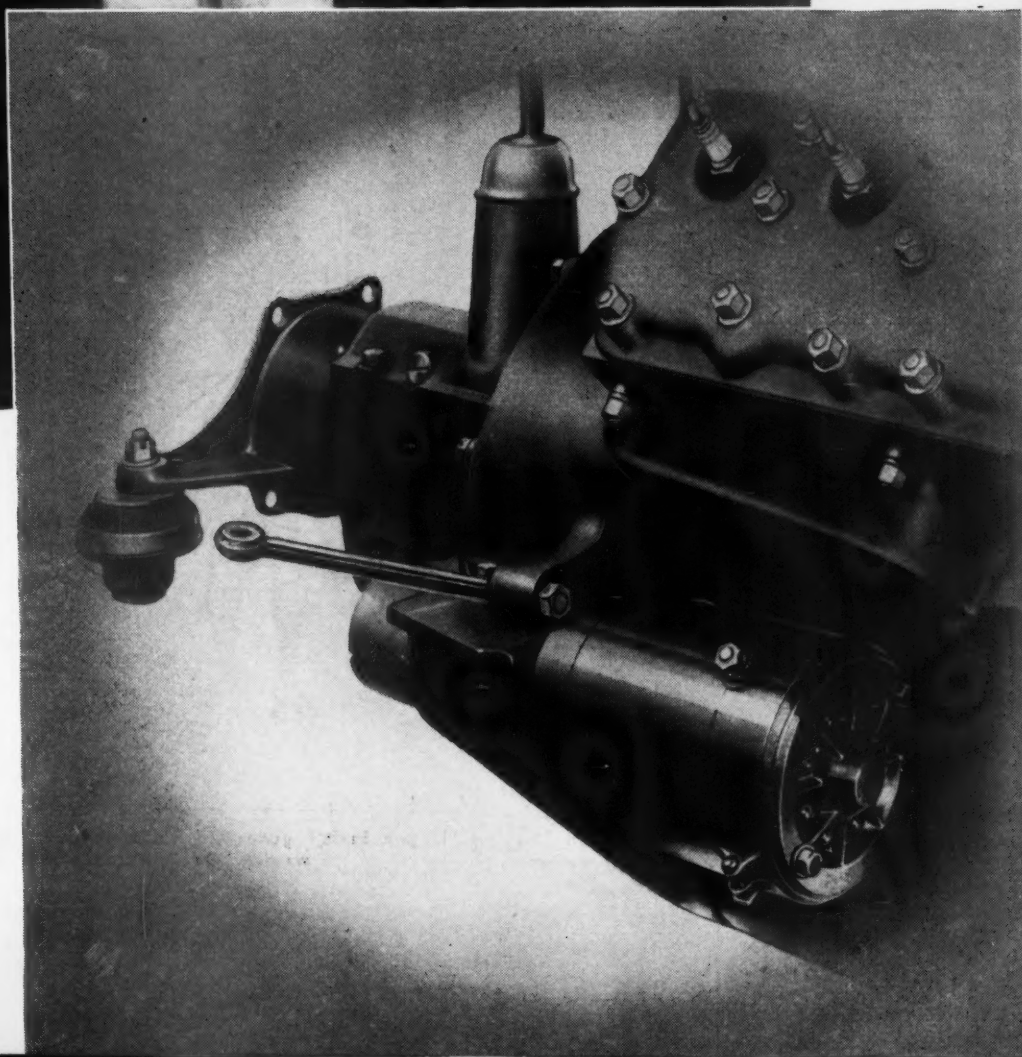
"But we *have* got plenty of new jobs," insisted Tommy, "and some big ones, too."

(Continued on page 72)



"You know, there's an old Chinese sayin': 'No matter how big a man's foot is, he can always get it in his mouth if he only talks enough,'" Pop said.

Close up view of engine showing righthand stay rod and engine rear mounting.



nd

n't

get

of

're

ny,

AGE

DENVER DEALERS Have Buying Group

Corporation formed by Denver dealers
for quantity purchases of equipment

By GEORGE FELTNER

THIRTY-SIX out of 40 Denver automobile dealers have organized Auto Dealers, Inc. in Denver, Colo., a company to buy automotive parts, tools, accessories, and service equipment and products. The organization is unique in that all of the dealers will share in purchases of quantity lot products, yet it is not a co-operative proposition. The group is incorporated with officers and directors appointed to manage business activities of the concern.

"It is not a buying agency," said Mr. Edgar H. Rust, general manager of the dealer group, "nor is it a co-operative enterprise. It is a corporation in every sense of the word, with a 'kitty' of more than \$160,000."

Although articles of incorporation were filed in November of last year, the company did not swing into operation until the latter part of January. Furthermore, it was not done impulsively, nor because of wartime difficulties in getting automobile accessories, although the war did accelerate the formation of the organization. Denver dealers have been talking about it for some years, and knew that some day such an organization would have to be brought into being.

"Dealers have always felt that they should participate in the profits of the markets that they create when they sell a new car. When a new car is sold, the buyer immediately becomes a prospective purchaser of tools, seat covers, polishes, radios, heaters, tires, tubes and various other accessories," said Rust.

That is not all that the company will buy for the dealers. New car dealers are heavy users of tools, oils, greases, grease guns, repairing and maintenance equipment of all kinds, including mops, brooms, brushes, etc. All equipment of this kind will be purchased through the new company. In many lines, the new car dealers feel that they have been taking a beating, especially so some ten years ago when many a dealer made a profit of only \$20 to \$50 on a car which the owner would drive out with and purchase \$75 to \$100 worth of accessories.

Through their new organization, the dealers will be able to get their accessories in quantity lots at quantity prices. At no time, however, will dealer-factory relations be interfered with, nor will the dealers be bound to purchase through the organization. On all standard, factory-produced parts and accessories, the dealer will continue his purchases direct from the car manufacturer.

"We'll have our hands full," said Mr. Rust, "and, as production increases, we'll have about all we can

take care of in just purchasing and distributing everything that the car dealer will want and need, but we have a very broad and comprehensive plan in mind.

"At present the organization owns some very good trackage. Unloading docks will be constructed; warehouses will be needed. And there is the possibility that some time in the future, we will construct warehouses on this, or some other trackage, where dealers can store cars that they cannot take care of in their own buildings and showrooms. There is also a possibility of extending the service outside Denver—perhaps make it statewide or even larger. We have had a good many inquiries from dealers throughout the state, and the Rocky Mountain region and several from several points in various parts of the nation.

"Probably at some future date, when the need arises," continued Rust, "we may go into salvage work, as well as into storage. There are a great many possibilities, and new ones will undoubtedly come to light as we get farther into the work."

Rust explained how profits would be divided.

(Continued on page 80)



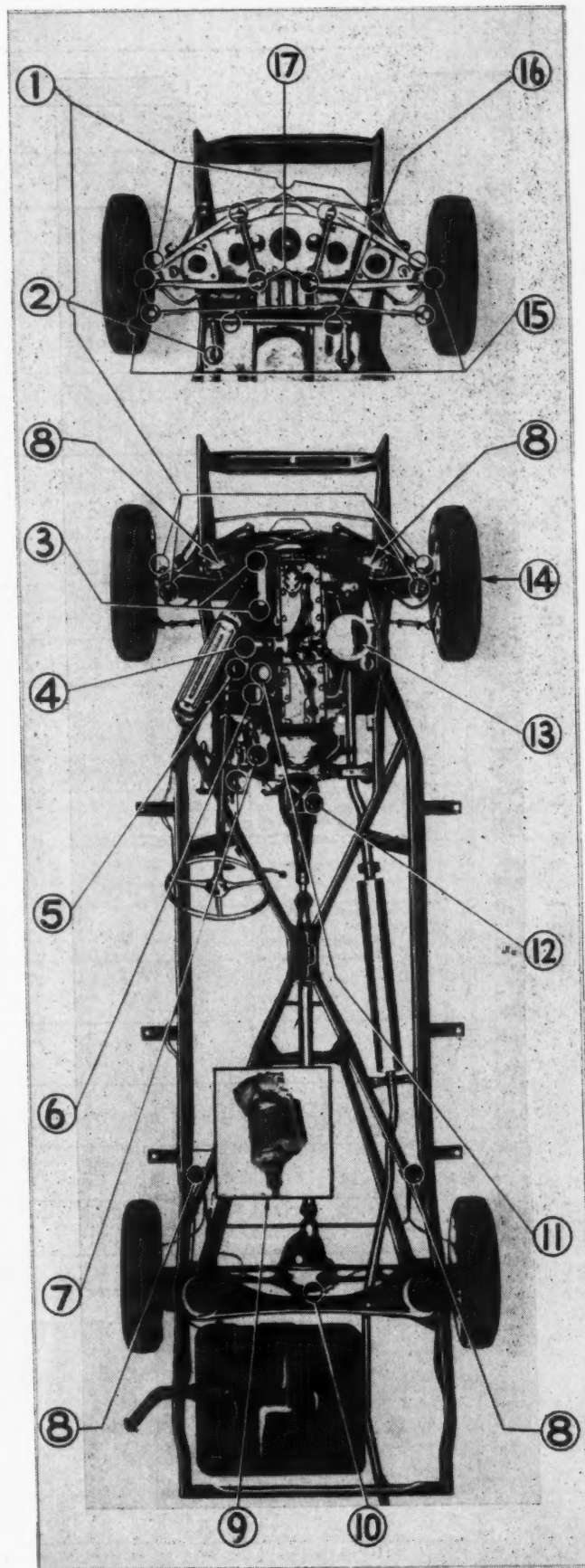
"If you hadn't gone and hired girl mechanics during the war, our customers wouldn't be demanding that we have curves now!"

1946 Oldsmobile Lubrication

When lubricating the 1946 Oldsmobile

models follow this detailed procedure

1. Upper and Lower Control Arm Pivot Pin—
Chassis Lubricant 1,000 miles
2. Steering Idler Arm Bushing
Chassis Lubricant 1,000 miles
3. Generator Oil Cups, Front and Rear Ends
Engine Oil 1,000 miles
4. Distributor—In grease cup use No. 2½
Cup Grease. Felt under rotor a drop of
engine oil 1,000 miles
5. Steering Gear—Special Year Around
Steering Gear Lubricant 5,000 miles
6. Starting Motor Oil Cup—Front End
Engine Oil 1,000 miles
7. Clutch and Brake Pedal Bushing Clutch
Linkage and Felts
Engine Oil 1,000 miles
8. Shock Absorbers
Fill with Shock Fluid 10,000 miles
9. Hydra-Matic Drive
Use only Hydra-Matic Drive Fluid.
Check every 2,000 miles
10. Differential—Capacity, 2½ Lbs.
Drain and replenish every 10,000 miles or twice a
year with S.A.E. 90 All-Purpose Hypoid Gear Lubri-
cant. For temperatures below minus 10 use S.A.E. 80
Hypoid Gear Lubricant.
11. Engine Oil—Refill Capacity—6 Cylinder, 5 Qts. 8
Cylinder, 6 Qts.
Summer Winter
Use S.A.E. 20 or 20-W If min. anticipated temps will be
Above 90, Use S.A.E.30 Not lower than 32 F. Use
Grade 20-W or S.A.E. 20.
If min. anticipated temps will be as low as 10 F. Use
Grade 20-W.
If min. anticipated temps will be as low as .10 F. Use
Grade 10-W.
If min. anticipated temps will be below .10 F. Use Grade
10-W plus 10 per cent kerosene.
12. Syncro-Mesh Transmission
Capacity—2 lbs.
S.A.E. 80 or 90 Mild E.P. Lubricant
13. Heavy Duty (Oil Bath) Air Cleaner
Capacity—1 Pint 5,000 miles
Clean and Replenish Oil Compartment
With S.A.E. 50 Oil every 5000 miles.
Often Under Dusty Operating Conditions
or if Severe Dust Storms Prevail.
14. Front Wheel Bearings
Clean and Pack with Wheel Bearing Grease
of High Melting Point 5,000 miles
15. King Pins—Upper and Lower Bushings.
Chassis Lubricant 1,000 miles
16. Tie Rod—Inner
Tie Rod—Outer
Chassis Lubricant 1,000 miles
17. Lower Control Arm Pivot Shafts
Chassis Lubricant 1,000 miles
- Door—Outside Handle Trunk and Rear Com-
partment Cylinder Locks. Apply Powered
Graphite to Key and Insert Key in Lock or
Lubricate Cylinder with an Atomizer Twice
a Year
- Door Lock Bolt and Wedge Plate..... Door Ease
- Front Seat Adjusting Mechanism
Apply Cup Grease Sparingly Along Top of
Seat Track and on Small Coil Spring at
Right Hand Adjuster Twice a Year.
- Door Check Linkage—Apply Oil to Pivot Joint
and Graphite to Door Rubber Bumpers.
- Hood—Lubricate the Hood Hinges with Engine
Oil and Latch with Approved Lubricant.



1946 PASSENGER CARS

GENERAL AND ENGINE SPECIFICATIONS

| Line Number | PASSENGER CAR MAKE AND MODEL | Wheelbase (in.) | Tread (in.) | | | Overall Dimensions (in.) | | | Tire Size (in.) | Gear Ratio | Number of Cylinders, Bore and Stroke (in.) | Cylinder Head Material | Total Displacement (Cu. In.) | Taxable Horsepower | Max. Brake Hp. at Specified RPM | | Max. Torque (Lb. Ft.) at Specified RPM | | Compression Pressure (lb.) | | At What R.P.M. | Weight per Cu. In. 5 Pass., 4 Door Sedan | Weight per Hp. 5 Pass., 4 Door Sedan | Hp. (with Accessories) per Cu. In. | Line Number |
|-------------|-----------------------------------|-----------------|-------------|--------|--|--------------------------|------------------------------|---|-----------------|------------|--|------------------------|------------------------------|--------------------|---------------------------------|---------------------------|--|---------------------------|----------------------------|--------------|----------------|--|--------------------------------------|------------------------------------|-------------|
| | | | Front | Rear | Length—Incl. Bumpers and Bumper Guards | Width | Height—Road to Roof, no load | Shipping Weight (Lb.) Sedan or Equivalent | | | | | | | With Bare Engine | With Standard Accessories | With Bare Engine | With Standard Accessories | Pressure (lb.) | Ratio (to-1) | | | | | |
| 1 | Bobbi-Car... Convertible Coupe | 80 | 42 | 42 | 132 | 70 1/2 | 64 1/2 | 4,50/12 | 4.50/12 | 4.45 | 4-2 1/2 x 4 3/4 | CI | 64.9 | 11.0 | 25-3600 | 21-3600 | 40-2000 | 202-2000 | 112 | 6.10 | CS | 12.29* | 32.71 | .323 | 1 |
| 2 | Buick... Eight, 50 | 124 | 58 1/2 | 61 1/2 | 212 1/2 | 70 1/2 | 64 1/2 | 6,50/16 | 6.50/16 | 4.45 | 8-3 1/2 x 4 1/2 | CI | 248.0 | 30.6 | 110-3600 | 105-3500 | 206-2000 | 202-2000 | 112 | 6.30 | CS | 12.29* | 32.71 | .423 | 2 |
| 3 | Buick... Eight, 70 | 128 | 59 1/2 | 62 1/2 | 217 1/2 | 70 1/2 | 65 1/2 | 7,00/15 | 7.00/15 | 4.11 | 8-3 1/2 x 4 1/2 | CI | 320.2 | 37.8 | 144-3600(a) | 133-3300 | 276-2000 | 267-2000 | 114 | 6.60 | CS | 12.29* | 32.71 | .416 | 3 |
| 4 | Cadillac... Eight, 61, 62, 60, 75 | (b) | (f) | (f) | (c) | (d) | (e) | 4,253* | (g) | 3.77 1/2 | 8-3 1/2 x 4 1/2 | CI | 346.0 | 39.2 | 150-3600 | 130-3200 | 274-1600 | 260-1700 | 100 | 7.25 | CS | 12.29* | 32.71 | .378 | 4 |
| 5 | Chevrolet... Six | 116 | 57 1/2 | 60 | 197 1/2 | 73 1/2 (b) | 69 1/2 | 3,090 | 6,00/16 | 4.11 | 6-3 1/2 x 3 1/2 | CI | 216.5 | 29.4 | 90-3300 | 83-3200 | 174-1100 | 168-1100 | 150 | 6.50 | CS | 14.27 | 37.22 | .383 | 5 |
| 6 | Chrysler... Six, C-38 | 121 1/2 | 57 | 60 1/2 | 208 1/2 | 77 1/2 | 69 1/2 | 6,50/15 | 6.50/15 | 3.90 | 8-3 1/2 x 4 1/2 | CI | 250.6 | 28.4 | 114-3600 | 104-3300 | 204-1200 | 192-1200 | 150 | 6.80 | CS | 14.27 | 37.22 | .455† | 6 |
| 7 | Chrysler... Eight, C-39 | 127 1/2 | 57 1/2 | 61 1/2 | 214 1/2 | 77 1/2 | 69 1/2 | 7,00/15 | 7.00/15 | 3.91 | 8-3 1/2 x 4 1/2 | CI | 323.5 | 33.8 | 135-3400 | 124-3300 | 270-1600 | 257-1600 | 150 | 6.80 | CS | 14.27 | 37.22 | .417† | 7 |
| 8 | Crosley... Four, CC-46 | 80 | 40 | 40 | 145 | 49 | 57 | 1,200 | 4,50/12 | 5.17 | 4-2 1/2 x 2 1/2 | SI | 44.0 | 10.0 | 109-3600 | 109-3600 | 192-1200 | 188-1200 | 125 | 7.50 | CS | 27.27 | 31.87 | .460† | 8 |
| 9 | De Soto... Six, S-11 | 121 1/2 | 57 | 60 1/2 | 207 1/2 | 75 1/2 | 69 1/2 | 3,485 | 6,50/15 | 3.90 | 8-3 1/2 x 4 1/2 | CI | 238.6 | 29.4 | 102-3600 | 90-3300 | 184-1200 | 175-1600 | 125 | 6.70 | CS | 14.03 | 31.85 | .439† | 9 |
| 10 | Dodge... Six, D-24 | 119 1/2 | 57 | 60 1/2 | 205 1/2 | 74 1/2 | 69 1/2 | 3,228 | 6,00/16 | 3.54 | 8-3 1/2 x 4 1/2 | CI | 239.4 | 32.5 | 100-3600 | 89-3600 | 180-2000 | 175-1600 | 125 | 6.75 | CS | 13.53 | 38.40 | .372 | 10 |
| 11 | Ford... Eight, 68A | 114 | 58 | 60 | 198 | 73 1/2 | 69 1/2 | 3,240 | 6,00/16 | 3.54 | 8-3 1/2 x 4 1/2 | CI | 239.4 | 32.5 | 100-3600 | 89-3600 | 180-2000 | 175-1600 | 125 | 6.75 | CS | 13.53 | 38.40 | .372 | 11 |
| 12 | Ford... Six F-47 | 123 1/2 | 58 | 60 | 203 | 72 1/2 | 69 1/2 | 3,240 | 6,50/15 | 4.27 | 8-3 1/2 x 4 1/2 | CI | 238.0 | 28.3 | 100-3600 | 89-3600 | 180-2000 | 175-1600 | 125 | 7.30 | CS | 13.53 | 38.40 | .442† | 12 |
| 13 | Hudson... Six-51, 52 | 121 | 56 1/2 | 59 1/2 | 203 | 72 1/2 | 69 1/2 | 3,240 | 6,50/15 | 4.27 | 8-3 1/2 x 4 1/2 | CI | 212.0 | 21.6 | 102-4000 | 102-4000 | 188-1200 | 188-1200 | 125 | 6.50 | CS | 14.03 | 31.85 | .481 | 13 |
| 14 | Hudson... Eight-53, 54 | 121 | 56 1/2 | 59 1/2 | 203 | 72 1/2 | 69 1/2 | 3,240 | 6,50/15 | 4.27 | 8-3 1/2 x 4 1/2 | CI | 254.0 | 28.8 | 128-4200 | 128-4200 | 188-1200 | 188-1200 | 125 | 6.50 | CS | 14.03 | 31.85 | .504 | 14 |
| 15 | Kaiser, Front Drive... Six K-85 | 117 | 58 | 60 | 203 | 72 1/2 | 69 1/2 | 3,240 | 6,00/15 | 4.10 | 6-3 1/2 x 3 1/2 | CI | 187.0 | 10.0 | 85-3600 | 85-3600 | 140-2100 | 134-2000 | 115 | 7.30 | CS | 14.03 | 31.85 | .454† | 15 |
| 16 | Lincoln... Twelve, 66H | 125 | 59 | 60 1/2 | 216 | 77 1/2 | 69 1/2 | 3,270 | 7,00/15 | 4.22 | 12-2 3/4 x 3 1/2 | CI | 305.0 | 41.4 | 130-3600 | 130-3600 | 235-1800 | 235-1800 | 167 | 7.20 | CS | 13.65 | 36.74 | .426† | 16 |
| 17 | Mercury... Eight, 66M | 118 | 58 | 60 | 201 1/2 | 73 1/2 | 69 1/2 | 3,270 | 6,50/15 | 3.54 | 8-3 1/2 x 4 1/2 | CI | 239.4 | 32.5 | 100-3600 | 89-3600 | 180-2000 | 175-1600 | 167 | 6.75 | CS | 13.65 | 36.74 | .372 | 17 |
| 18 | Nash... Six, 4640 | 112 | 58 1/2 | 59 1/2 | 199 1/2 | 73 1/2 | 69 1/2 | 2,675 | 6,00/16 | 4.11 | 6-3 1/2 x 3 1/2 | CI | 172.6 | 23.4 | 82-3600 | 82-3600 | 138-1600 | 138-1600 | 125 | 7.00 | CS | 15.49 | 32.62† | .475† | 18 |
| 19 | Nash... Six, 4660 | 121 | 57 1/2 | 60 1/2 | 205 1/2 | 75 1/2 | 69 1/2 | 2,675 | 6,50/15 | 4.11 | 6-3 1/2 x 4 1/2 | CI | 234.8 | 27.3 | 112-3400 | 112-3400 | 208-1600 | 208-1600 | 125 | 6.80 | CS | 15.49 | 32.62† | .475† | 19 |
| 20 | Oldsmobile... Six | 125 | 58 | 61 1/2 | 213 | 76 | 69 1/2 | 3,528 | 6,50/16 | 4.30 | 8-3 1/2 x 4 1/2 | CI | 238.1 | 29.4 | 100-3400 | 94-3400 | 180-1200 | 185-1200 | 115 | 6.50 | CS | 14.81 | 37.60 | .395 | 20 |
| 21 | Oldsmobile... Eight | 125 | 58 | 61 1/2 | 213 | 76 | 69 1/2 | 3,528 | 6,50/16 | 4.30 | 8-3 1/2 x 4 1/2 | CI | 257.1 | 33.8 | 110-3600 | 104-3600 | 210-2000 | 204-2000 | 107 | 6.50 | CS | 14.19 | 35.00 | .405 | 21 |
| 22 | Packard... Six, 2100 | 120 | 59 1/2 | 60 1/2 | 209 1/2 | 76 1/2 | 69 1/2 | 3,485 | 6,50/15 | 4.30 | 8-3 1/2 x 4 1/2 | CI | 245.0 | 29.4 | 105-3600 | 105-3600 | 192-2000 | 192-2000 | 125 | 6.71 | CS | 14.14 | 34.00 | .423† | 22 |
| 23 | Packard... Eight, 2101, 2100 | 127 | 59 1/2 | 60 1/2 | 215 1/2 | 76 1/2 | 69 1/2 | 3,485 | 6,50/15 | 4.11 | 8-3 1/2 x 4 1/2 | CI | 282.0 | 33.8 | 125-3600 | 125-3600 | 230-2000 | 230-2000 | 125 | 6.85 | CS | 14.14 | 34.00 | .443† | 23 |
| 24 | Packard... Eight, 2103, 2106 | 127 | 59 1/2 | 60 1/2 | 215 1/2 | 76 1/2 | 69 1/2 | 3,485 | 6,50/15 | 3.92 | 8-3 1/2 x 4 1/2 | CI | 356.0 | 39.2 | 165-3600 | 165-3600 | 292-2000 | 292-2000 | 125 | 6.85 | CS | 14.14 | 34.00 | .463† | 24 |
| 25 | Plymouth... Six, P-15 | 117 | 57 | 59 1/2 | 199 1/2 | 73 1/2 | 69 1/2 | 3,000 | 6,00/16 | 3.90 | 6-3 1/2 x 4 1/2 | CI | 217.8 | 25.4 | 85-3600 | 85-3600 | 172-1200 | 172-1200 | 120 | 6.60 | CS | 14.04 | 32.21 | .436† | 25 |
| 26 | Pontiac... Six, 1946-26 | 119 | 58 | 61 1/2 | 204 1/2 | 76 1/2 | 69 1/2 | 3,330 | 6,00/16 | 4.11 | 8-3 1/2 x 4 1/2 | CI | 239.2 | 30.4 | 83.5-3400 | 87.5-3200 | 188-1400 | 188-1400 | 160 | 6.50 | CS | 13.92 | 38.05 | .366 | 26 |
| 27 | Pontiac... Six, 1946-26 | 122 | 58 | 61 1/2 | 210 1/2 | 76 1/2 | 69 1/2 | 3,330 | 6,00/16 | 4.30 | 8-3 1/2 x 4 1/2 | CI | 239.2 | 30.4 | 83.5-3400 | 87.5-3200 | 188-1400 | 188-1400 | 160 | 6.50 | CS | 13.92 | 38.05 | .366 | 27 |
| 28 | Pontiac... Eight, 1946-27 | 119 | 58 | 61 1/2 | 204 1/2 | 76 1/2 | 69 1/2 | 3,330 | 6,00/16 | 4.11 | 8-3 1/2 x 4 1/2 | CI | 246.9 | 33.8 | 107.5-3700 | 101.5-3600 | 192-2100 | 192-2100 | 155 | 6.50 | CS | 14.16 | 34.77 | .408 | 28 |
| 29 | Pontiac... Eight, 1946-28 | 122 | 58 | 61 1/2 | 210 1/2 | 76 1/2 | 69 1/2 | 3,330 | 6,00/16 | 4.30 | 8-3 1/2 x 4 1/2 | CI | 246.9 | 33.8 | 107.5-3700 | 101.5-3600 | 192-2100 | 192-2100 | 155 | 6.50 | CS | 14.16 | 34.77 | .408 | 29 |
| 30 | Studebaker... Six, SG | 117 1/2 | 56 1/2 | 57 | 197 1/2 | 73 1/2 | 67 | 3,000 | 6,00/16 | 4.11 | 6-3 1/2 x 4 1/2 | CI | 189.6 | 21.6 | 80-4000 | 80-4000 | 134-2000 | 134-2000 | 160 | 6.50 | CS | 14.16 | 34.77 | .472† | 30 |

ABBREVIATIONS

*—Model 62
†—For Models 61, 62 and 60; 4.27 on Model 75
‡—Base Engine Hp
§—Estimated
||—Without fan and muffler

(b)—Model 61-126 in.; 62-120 in.; 60-133 in.; 75-136 in.
(c)—Model 61-215 1/2 in.; 62-219 1/2 in.; 60-224 1/2 in.; 75-228 1/2 in.
(d)—Model 61-90 1/2; 62 and 60-80 1/2; 75-82 1/2
(e)—Model 61-94 1/2; 62 and 60-83 1/2; 75-88 1/2

(f)—Models 61, 62 and 60—Front 59, Rear 63
(g)—Models 61, 62 and 60—Front 69 1/2, Rear 62 1/2
(h)—Models 61, 62 and 60—7.00/15; Model 75—7.50/16
(i)—Fleetline; all others 73 1/2
(j)—1200-2000 r.p.m.

(k)—Loaded
(l)—3575 lb. on 2101; 3435 lb. on 2111
(m)—3990 lb. on 2103; 4065 lb. on 2106
(n)—12.67 for 2101; 12.89 for 2111
(o)—11.20 for 2103; 11.41 for 2106
(p)—28.60 for 2101; 29.08 for 2111—both calculated on Base Engine Hp
(r)—24.18 for 2103; 24.63 for 2106—both calculated on Base Engine Hp
(s)—Model 54—6.50/15; Model 53—6.00/10
(t)—Cast Iron and Aluminum
(u)—Cast Iron
(v)—Cranking Speed
(w)—Steel

(a)—Without fan and muffler

(b)—Model 61-041/2; 62 and 60-0311; 60-0312

APRIL, 1946

1946 PASSENGER CARS

PISTONS, RINGS AND CONNECTING RODS

| PISTON | | | | | | | | | | PISTON RINGS | | | | | | | | | | WRIST PIN | | | CONNECTING RODS | | | | |
|--------------|------------------------------|--|-------|----------|----------------------------|---|--------------|--------------------------|-----------------|-------------------------|-------------|-------------|-------------------|------------------------------|-------------|-------------|-------------------|------------------------------|-----------------|-----------|--------------|----------------|-----------------|-----------------------------------|-------------------------------|-------------------------|--------------|
| Line Numbers | PASSENGER CAR MAKE AND MODEL | Number of Cylinders, Bore and Stroke (in.) | Make | Material | Features | Weight (Oz.) Without Rings, Pin and Bushing | Length (in.) | Average Clearances (in.) | | Ring Groove Depth (in.) | Oil | | | | | | Compression | | | | Length (in.) | Diameter (in.) | Locked In | Average Clearance (in.) In Piston | Length (in.) Center to Center | Material (S. A. E. No.) | Weight (Oz.) |
| | | | | | | | | Top Land | Bottom of Skirt | | Number Used | Width (in.) | Average Gap (in.) | Maximum Wall Thickness (in.) | Number Used | Width (in.) | Average Gap (in.) | Maximum Wall Thickness (in.) | Expanders Used? | | | | | | | | |
| 1 | Buick..... | Eight, 50 | A-B | Al | C, Tu, Trs | 13.77 | 4.328 | .0285 | .00185 | .186 | 2 | .1875 | .015 | .140 | 2 | .0937 | .015 | .140 | N | 2.687 | R | .00035 | 7 1/2 | 28.46 | 1045 | 28.46 | |
| 2 | Buick..... | Eight, 70 | A-B | Al | C, Tu, Trs | 17.94 | 4.562 | .0295 | .0020 | .182 | 2 | .1875 | .015 | .150 | 2 | .0937 | .015 | .150 | N | 3.062 | R | .00035 | 8 1/2 | 35.58 | 1045 | 35.58 | |
| 3 | Cadillac..... | Eight, 61, 62, 60, 75 | A-B | Al | Trs, An | 19.01 | 4.125 | .0021 | .0005 | ..... | 1 | .1875 | .015 | .150 | 2 | .0781 | .015 | .170 | N | 3.062 | F | .00007 | 8 1/2 | 33.00 | 1035 | 33.00 | |
| 4 | Chevrolet..... | Six | ..... | Cl | Fr, O, Sp | 24.98 | 3.755 | .0195 | ..... | .176 | 1 | .1835 | .010 | .155 | 2 | .1237 | .010 | .155 | N | 3.150 | R | SF | 6 1/2 | 30.70 | DFS | 30.70 | |
| 5 | Chrysler..... | Six, C-38 | ..... | Al | U ₂ C | 18.50 | 3.875 | .0305 | .001 | .178 | 2 | .1562 | .011 | .169 | 2 | .0937 | .011 | .169 | ..... | 2.875 | F | .00025 | 7 1/2 | 32.4 | HMS | 32.4 | |
| 6 | Chrysler..... | Eight, C-39 | ..... | Al | U ₂ C | 16.50 | 3.875 | .0305 | .0005 | .172 | 2 | .1562 | .011 | .150 | 2 | .0937 | .011 | .162 | ..... | 2.750 | F | .00025 | 9 | ..... | HMS | ..... |  |
| 7 | Crosley..... | Four, CC-48 | ..... | Al | As, O | 4.92 | 1.906 | .0165 | .0030 | .131 | 1 | .0932 | .011 | .115 | 2 | .0622 | .012 | .120 | N | 2.260 | F | .00035 | 4 1/2 | 9.62 | 3140 | 9.62 | |
| 8 | De Soto..... | Six, S-11 | ..... | Al | U ₂ C | 18.50 | 3.875 | .0305 | .001 | .178 | 2 | .1562 | .011 | .150 | 2 | .0937 | .011 | .189 | ..... | 2.875 | F | .00025 | 8 | 34.1 | HMS | 34.1 | |
| 9 | Dodge..... | Six, D-24 | ..... | Al | U ₂ C | 16.00 | 3.687 | .0305 | .001 | .172 | 2 | .1562 | .011 | .150 | 2 | .0937 | .011 | .162 | ..... | 2.750 | F | .00025 | 7 1/2 | ..... | HMS | ..... |  |
| 10 | Ford..... | Eight, 69A | Star | Al | S ₂ , O, Tp | 13.00 | 2.980 | .0220 | .0017 | .165 | 2 | .1547 | .014 | .140 | 2 | .0917 | .014 | .140 | N | 2.550 | F | .00030 | 7 | 17.35 | DFS | 17.35 | |
| 11 | Fraser..... | Six F-47 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |
| 12 | Hudson..... | Six-51, 52 | Own | Al | C | 10.75 | 3.1875 | .016 | .0008 | .148 | 2 | (l) | .010 | .135 | 2 | .093 | .010 | .133 | N | 2.4375 | F | Sef | 8 1/2 | 31.38 | DFS | 31.38 | |
| 13 | Hudson..... | Eight-53, 54 | Own | Al | C | 10.75 | 3.1875 | .016 | .0008 | .148 | 2 | (l) | .010 | .135 | 2 | .093 | .010 | .133 | N | 2.4375 | F | Sef | 8 1/2 | 31.38 | DFS | 31.38 | |
| 14 | Kaiser..... | Six K-55 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |
| 15 | Lincoln..... | Twelve, 66H | Own | CS | ..... | 14.25 | 3.100 | .0179 | .0025 | .164 | 1 | .1875 | .010 | .113 | 2 | .0937 | .010 | .140 | Y | 2.607 | F | .00060 | 7.40 | 25.27 | DFS | 25.27 | |
| 16 | Mercury..... | Eight, 69M | Star | Al | S ₂ , O, Tp | 13.00 | 2.980 | .0220 | .0017 | .165 | 2 | .1547 | .014 | .140 | 2 | .0917 | .014 | .140 | N | 2.550 | F | .00030 | 7 | 17.35 | DFS | 17.35 | |
| 17 | Nash..... | Six, 46-40 | Own | Al | S ₂ , O, Tp, St | ..... | 3.375 | ..... | ..... | .174 | 1 | .1875 | .020 | ..... | 2 | .0937 | .015 | ..... | N | 2.609 | F | Sef | 6 1/2 | 24.00 | Steel | 24.00 | |
| 18 | Nash..... | Six, 46-50 | Own | Al | S ₂ , O, Tp, St | ..... | 3.875 | ..... | .0020 | .175 | 2 | .1550 | .015 | .145 | 2 | .1240 | .015 | .145 | N | 2.804 | F | Sef | 8 1/2 | 36.25 | Steel | 36.25 | |
| 19 | Oldsmobile..... | Six | Own | Al | Trs, C, Pf | 18.50 | 4.031 | .0255 | .0007 | .171 | 2 | .1875 | .011 | .155 | 2 | .0937 | .013 | .172 | N | 3.155 | P | (g) | 7 1/2 | 29.00 | x-1335 | 29.00 | |
| 20 | Oldsmobile..... | Eight | Own | Al | Trs, C, Pf | 18.00 | 3.937 | .0255 | .0015 | .171 | 2 | .1875 | .011 | .150 | 2 | .0937 | .011 | .155 | N | 2.484 | P | (g) | 7 1/2 | 28.00 | x-1335 | 28.00 | |
| 21 | Packard..... | Six, 2100 | ..... | Al | Au | 20.25 | 3.875 | ..... | .0007 | ..... | 1 | .1882 | .011 | ..... | 2 | (d) | .012 | ..... | ..... | 3.015 | F | PuF | 7 1/2 | 31.60 | DFS | 31.60 | |
| 22 | Packard..... | Eight, 2101, 2111 | ..... | Al | Au | 17.25 | 3.875 | ..... | .0007 | ..... | 1 | .1882 | .011 | ..... | 2 | (d) | .012 | ..... | ..... | 2.756 | F | PuF | 7 1/2 | 31.60 | DFS | 31.60 | |
| 23 | Packard..... | Eight, 2103, 2106 | ..... | Al | Au | 20.25 | 3.875 | ..... | .0007 | ..... | 2 | .1882 | .011 | ..... | 2 | (d) | .012 | ..... | ..... | 3.015 | F | PuF | 9 1/2 | 39.00 | DFS | 39.00 | |
| 24 | Plymouth..... | Six, P-15 | ..... | Al | U ₂ C | 16.0 | 2.000 | .0305 | .0010 | .172 | 2 | .1562 | .011 | .150 | 2 | .0937 | .011 | .162 | ..... | 2.750 | F | .00025 | 7 1/2 | ..... | HMS | ..... |  |
| 25 | Pontiac..... | Six, 1946-28 | Own | CN | Ep | 27.10 | 3.593 | .0235 | .0020 | .194 | 2 | .1875 | .012 | .150 | 2 | .0937 | .009 | .175 | N | 3.062 | P | PuF | 7 1/2 | 37.00 | 1045 | 37.00 | |
| 26 | Pontiac..... | Six, 1946-28 | Own | CN | Ep | 27.10 | 3.593 | .0235 | .0020 | .194 | 2 | .1875 | .012 | .150 | 2 | .0937 | .009 | .175 | N | 3.062 | P | PuF | 7 1/2 | 1045 | 1045 | 1045 | |
| 27 | Pontiac..... | Eight, 1946-27 | Own | CN | Ep | 24.70 | 3.593 | .0225 | .0020 | .188 | 2 | .1875 | .009 | .153 | 2 | .0937 | .011 | .150 | N | 2.875 | P | PuF | 7 1/2 | 31.70 | 1045 | 31.70 | |
| 28 | Pontiac..... | Eight, 1946-28 | Own | CN | Ep | 24.70 | 3.593 | .0225 | .0020 | .188 | 2 | .1875 | .009 | .155 | 2 | .0937 | .011 | .150 | N | 2.875 | P | PuF | 7 1/2 | 31.70 | 1045 | 31.70 | |
| 29 | Studebaker..... | Six, 5G | AC | Lyn | Trs | 8.16 | 2.905 | .0016 | Sef | .168 | 1 | .1562 | .012 | .135 | 2 | (f) | .012 | .150 | N | 2.625 | R | .00020 | 6 1/2 | 20.96 | DFS | 20.96 | |

ABBREVIATIONS
(a)—Upper 160, Lower 140
(b)—Upper 170, Lower 150
(c)—Upper 153, Lower 1645
(d)—Upper 153, Lower 1645
(e)—Upper 153, Lower 1645
(f)—Upper 153, Lower 1645
(g)—Upper 153, Lower 1645
(h)—Upper 153, Lower 1645
(i)—Upper 153, Lower 1645
(j)—Upper 153, Lower 1645
(k)—Upper 153, Lower 1645
(l)—Upper 153, Lower 1645
(m)—Upper 153, Lower 1645
(n)—Upper 153, Lower 1645
(o)—Upper 153, Lower 1645
(p)—Upper 153, Lower 1645
(q)—Upper 153, Lower 1645
(r)—Upper 153, Lower 1645
(s)—Upper 153, Lower 1645
(t)—Upper 153, Lower 1645
(u)—Upper 153, Lower 1645
(v)—Upper 153, Lower 1645
(w)—Upper 153, Lower 1645
(x)—Upper 153, Lower 1645
(y)—Upper 153, Lower 1645
(z)—Upper 153, Lower 1645
(aa)—Upper 153, Lower 1645
(ab)—Upper 153, Lower 1645
(ac)—Upper 153, Lower 1645
(ad)—Upper 153, Lower 1645
(ae)—Upper 153, Lower 1645
(af)—Upper 153, Lower 1645
(ag)—Upper 153, Lower 1645
(ah)—Upper 153, Lower 1645
(ai)—Upper 153, Lower 1645
(aj)—Upper 153, Lower 1645
(ak)—Upper 153, Lower 1645
(al)—Upper 153, Lower 1645
(am)—Upper 153, Lower 1645
(an)—Upper 153, Lower 1645
(ao)—Upper 153, Lower 1645
(ap)—Upper 153, Lower 1645
(aq)—Upper 153, Lower 1645
(ar)—Upper 153, Lower 1645
(as)—Upper 153, Lower 1645
(at)—Upper 153, Lower 1645
(au)—Upper 153, Lower 1645
(av)—Upper 153, Lower 1645
(aw)—Upper 153, Lower 1645
(ax)—Upper 153, Lower 1645
(ay)—Upper 153, Lower 1645
(az)—Upper 153, Lower 1645
(ba)—Upper 153, Lower 1645
(bb)—Upper 153, Lower 1645
(bc)—Upper 153, Lower 1645
(bd)—Upper 153, Lower 1645
(be)—Upper 153, Lower 1645
(bf)—Upper 153, Lower 1645
(bg)—Upper 153, Lower 1645
(bh)—Upper 153, Lower 1645
(bi)—Upper 153, Lower 1645
(bj)—Upper 153, Lower 1645
(bk)—Upper 153, Lower 1645
(bl)—Upper 153, Lower 1645
(bm)—Upper 153, Lower 1645
(bn)—Upper 153, Lower 1645
(bo)—Upper 153, Lower 1645
(bp)—Upper 153, Lower 1645
(bq)—Upper 153, Lower 1645
(br)—Upper 153, Lower 1645
(bs)—Upper 153, Lower 1645
(bt)—Upper 153, Lower 1645
(bu)—Upper 153, Lower 1645
(bv)—Upper 153, Lower 1645
(bw)—Upper 153, Lower 1645
(bx)—Upper 153, Lower 1645
(by)—Upper 153, Lower 1645
(bz)—Upper 153, Lower 1645
(ca)—Upper 153, Lower 1645
(cb)—Upper 153, Lower 1645
(cc)—Upper 153, Lower 1645
(cd)—Upper 153, Lower 1645
(ce)—Upper 153, Lower 1645
(cf)—Upper 153, Lower 1645
(cg)—Upper 153, Lower 1645
(ch)—Upper 153, Lower 1645
(ci)—Upper 153, Lower 1645
(cj)—Upper 153, Lower 1645
(ck)—Upper 153, Lower 1645
(cl)—Upper 153, Lower 1645
(cm)—Upper 153, Lower 1645
(cn)—Upper 153, Lower 1645
(co)—Upper 153, Lower 1645
(cp)—Upper 153, Lower 1645
(cq)—Upper 153, Lower 1645
(cr)—Upper 153, Lower 1645
(cs)—Upper 153, Lower 1645
(ct)—Upper 153, Lower 1645
(cu)—Upper 153, Lower 1645
(cv)—Upper 153, Lower 1645
(cw)—Upper 153, Lower 1645
(cx)—Upper 153, Lower 1645
(cy)—Upper 153, Lower 1645
(cz)—Upper 153, Lower 1645
(da)—Upper 153, Lower 1645
(db)—Upper 153, Lower 1645
(dc)—Upper 153, Lower 1645
(dd)—Upper 153, Lower 1645
(de)—Upper 153, Lower 1645
(df)—Upper 153, Lower 1645
(dg)—Upper 153, Lower 1645
(dh)—Upper 153, Lower 1645
(di)—Upper 153, Lower 1645
(dj)—Upper 153, Lower 1645
(dk)—Upper 153, Lower 1645
(dl)—Upper 153, Lower 1645
(dm)—Upper 153, Lower 1645
(dn)—Upper 153, Lower 1645
(do)—Upper 153, Lower 1645
(dp)—Upper 153, Lower 1645
(dq)—Upper 153, Lower 1645
(dr)—Upper 153, Lower 1645
(ds)—Upper 153, Lower 1645
(dt)—Upper 153, Lower 1645
(du)—Upper 153, Lower 1645
(dv)—Upper 153, Lower 1645
(dw)—Upper 153, Lower 1645
(dx)—Upper 153, Lower 1645
(dy)—Upper 153, Lower 1645
(dz)—Upper 153, Lower 1645
(ea)—Upper 153, Lower 1645
(eb)—Upper 153, Lower 1645
(ec)—Upper 153, Lower 1645
(ed)—Upper 153, Lower 1645
(ee)—Upper 153, Lower 1645
(ef)—Upper 153, Lower 1645
(eg)—Upper 153, Lower 1645
(eh)—Upper 153, Lower 1645
(ei)—Upper 153, Lower 1645
(ej)—Upper 153, Lower 1645
(ek)—Upper 153, Lower 1645
(el)—Upper 153, Lower 1645
(em)—Upper 153, Lower 1645
(en)—Upper 153, Lower 1645
(eo)—Upper 153, Lower 1645
(ep)—Upper 153, Lower 1645
(eq)—Upper 153, Lower 1645
(er)—Upper 153, Lower 1645
(es)—Upper 153, Lower 1645
(et)—Upper 153, Lower 1645
(eu)—Upper 153, Lower 1645
(ev)—Upper 153, Lower 1645
(ew)—Upper 153, Lower 1645
(ex)—Upper 153, Lower 1645
(ey)—Upper 153, Lower 1645
(ez)—Upper 153, Lower 1645
(fa)—Upper 153, Lower 1645
(fb)—Upper 153, Lower 1645
(fc)—Upper 153, Lower 1645
(fd)—Upper 153, Lower 1645
(fe)—Upper 153, Lower 1645
(ff)—Upper 153, Lower 1645
(fg)—Upper 153, Lower 1645
(fh)—Upper 153, Lower 1645
(fi)—Upper 153, Lower 1645
(fj)—Upper 153, Lower 1645
(fk)—Upper 153, Lower 1645
(fl)—Upper 153, Lower 1645
(fm)—Upper 153, Lower 1645
(fn)—Upper 153, Lower 1645
(fo)—Upper 153, Lower 1645
(fp)—Upper 153, Lower 1645
(fq)—Upper 153, Lower 1645
(fr)—Upper 153, Lower 1645
(fs)—Upper 153, Lower 1645
(ft)—Upper 153, Lower 1645
(fu)—Upper 153, Lower 1645
(fv)—Upper 153, Lower 1645
(fw)—Upper 153, Lower 1645
(fx)—Upper 153, Lower 1645
(fy)—Upper 153, Lower 1645
(fz)—Upper 153, Lower 1645
(ga)—Upper 153, Lower 1645
(gb)—Upper 153, Lower 1645
(gc)—Upper 153, Lower 1645
(gd)—Upper 153, Lower 1645
(ge)—Upper 153, Lower 1645
(gf)—Upper 153, Lower 1645
(gg)—Upper 153, Lower 1645
(gh)—Upper 153, Lower 1645
(gi)—Upper 153, Lower 1645
(gj)—Upper 153, Lower 1645
(gk)—Upper 153, Lower 1645
(gl)—Upper 153, Lower 1645
(gm)—Upper 153, Lower 1645
(gn)—Upper 153, Lower 1645
(go)—Upper 153, Lower 1645
(gp)—Upper 153, Lower 1645
(gq)—Upper 153, Lower 1645
(gr)—Upper 153, Lower 1645
(gs)—Upper 153, Lower 1645
(gt)—Upper 153, Lower 1645
(gu)—Upper 153, Lower 1645
(gv)—Upper 153, Lower 1645
(gw)—Upper 153, Lower 1645
(gx)—Upper 153, Lower 1645
(gy)—Upper 153, Lower 1645
(gz)—Upper 153, Lower 1645
(ha)—Upper 153, Lower 1645
(hb)—Upper 153, Lower 1645
(hc)—Upper 153, Lower 1645
(hd)—Upper 153, Lower 1645
(he)—Upper 153, Lower 1645
(hf)—Upper 153, Lower 1645
(hg)—Upper 153, Lower 1645
(hh)—Upper 153, Lower 1645
(hi)—Upper 153, Lower 1645
(hj)—Upper 153, Lower 1645
(hk)—Upper 153, Lower 1645
(hl)—Upper 153, Lower 1645
(hm)—Upper 153, Lower 1645
(hn)—Upper 153, Lower 1645
(ho)—Upper 153, Lower 1645
(hp)—Upper 153, Lower 1645
(hq)—Upper 153, Lower 1645
(hr)—Upper 153, Lower 1645
(hs)—Upper 153, Lower 1645
(ht)—Upper 153, Lower 1645
(hu)—Upper 153, Lower 1645
(hv)—Upper 153, Lower 1645
(hw)—Upper 153, Lower 1645
(hx)—Upper 153, Lower 1645
(hy)—Upper 153, Lower 1645
(hz)—Upper 153, Lower 1645
(ia)—Upper 153, Lower 1645
(ib)—Upper 153, Lower 1645
(ic)—Upper 153, Lower 1645
(id)—Upper 153, Lower 1645
(ie)—Upper 153, Lower 1645
(if)—Upper 153, Lower 1645
(ig)—Upper 153, Lower 1645
(ih)—Upper 153, Lower 1645
(ii)—Upper 153, Lower 1645
(ij)—Upper 153, Lower 1645
(ik)—Upper 153, Lower 1645
(il)—Upper 153, Lower 1645
(im)—Upper 153, Lower 1645
(in)—Upper 153, Lower 1645
(io)—Upper 153, Lower 1645
(ip)—Upper 153, Lower 1645
(iq)—Upper 153, Lower 1645
(ir)—Upper 153, Lower 1645
(is)—Upper 153, Lower 1645
(it)—Upper 153, Lower 1645
(iu)—Upper 153, Lower 1645
(iv)—Upper 153, Lower 1645
(iw)—Upper 153, Lower 1645
(ix)—Upper 153, Lower 1645
(iy)—Upper 153, Lower 1645
(iz)—Upper 153, Lower 1645
(ja)—Upper 153, Lower 1645
(jb)—Upper 153, Lower 1645
(jc)—Upper 153, Lower 1645
(jd)—Upper 153, Lower 1645
(je)—Upper 153, Lower 1645
(jf)—Upper 153, Lower 1645
(jg)—Upper 153, Lower 1645
(jh)—Upper 153, Lower 1645
(ji)—Upper 153, Lower 1645
(jj)—Upper 153, Lower 1645
(jk)—Upper 153, Lower 1645
(jl)—Upper 153, Lower 1645
(jm)—Upper 153, Lower 1645
(jn)—Upper 153, Lower 1645
(jo)—Upper 153, Lower 1645
(jp)—Upper 153, Lower 1645
(jq)—Upper 153, Lower 1645
(jr)—Upper 153, Lower 1645
(js)—Upper 153, Lower 1645
(jt)—Upper 153, Lower 1645
(ju)—Upper 153, Lower 1645
(jv)—Upper 153, Lower 1645
(jw)—Upper 153, Lower 1645
(jx)—Upper 153, Lower 1645
(jy)—Upper 153, Lower 1645
(jz)—Upper 153, Lower 1645
(ka)—Upper 153, Lower 1645
(kb)—Upper 153, Lower 1645
(kc)—Upper 153, Lower 1645
(kd)—Upper 153, Lower 1645
(ke)—Upper 153, Lower 1645
(kf)—Upper 153, Lower 1645
(kg)—Upper 153, Lower 1645
(kh)—Upper 153, Lower 1645
(ki)—Upper 153, Lower 1645
(kj)—Upper 153, Lower 1645
(

Sep—Separate
Sl—Slip-in
So—Solid
SSb—Special Alloy—Steel Backed
TB—Tin Base, Babbitt
Y—Yes

F—Front
Fb—Floating Bearings
N—No or None
R—Rear
SCC—Special Composite
SF—Selective Fit

Sub-Babbitt
Sbt-Bronze-back Lined with Tin Base. Bernax Optional
BSb-Babbitt-Steel Backed
C-Center
CMM-Copper-Nickel Matrix, Babbitt Overlay-Steel Backed
Dsb-Ductile Steel Backed

*—Lower Bearing Size
 a)—Bearing Dimensions
 b)—Rear .0005 to .002; Others .001 to .003
 c)—SAE 13 or Equivalent
 A—Above

1946 PASSENGER CARS
VALVES, INTAKE AND EXHAUST

| PASSENGER CAR MAKE AND MODEL | | | | | | | | | | | | | INTAKE VALVE | | | | | | | | | | EXHAUST VALVE | | | | | | | | | |
|--------------------------------------|-------|----------|----------------------|---------------------|-----------------------------|--------------|---------------|------------|----------------|--------------|------------|--------------|--------------|-------|----------------------|---------------------|-----------------------------|---------------|----------------|------------|--------------|------------|---------------|------------|--------------|--------------|------------|--------|--------|-------|-------|----|
| Line Numbers | Make | Material | Overall Length (in.) | Head Diameter (in.) | Port Diameter Minimum (in.) | Seat | | Lift (in.) | Springs | | | | Material | Make | Overall Length (in.) | Head Diameter (in.) | Port Diameter Minimum (in.) | Seat | | Lift (in.) | Springs | | | | Line Numbers | | | | | | | |
| | | | | | | Angle (Deg.) | Inserts Used? | | Pressure (Lb.) | Length (in.) | | Angle (Deg.) | | | | | | Inserts Used? | Pressure (Lb.) | | Length (in.) | | | | | | | | | | | |
| | | | | | | | | | | Valve Closed | Valve Open | | | | | | | | | | Valve Closed | Valve Open | Valve Closed | Valve Open | | Valve Closed | Valve Open | | | | | |
| 1 Buick.....Eight, 50 | T-R | 3140 | 5.109 | 1.531 | 1.125 | 45 | N | .372 | 321 | 771 | 1.9371 | 1.9931 | .348 | .372 | 45 | N | .372 | 321 | 771 | 1.9371 | 1.9931 | .348 | .372 | 45 | N | 321 | 771 | 1.9371 | 1.9931 | 2.343 | | |
| 2 Buick.....Eight, 70 | T-R | 3140 | 5.250 | 1.781 | 1.375 | 45 | N | .372 | 321 | 771 | 1.9371 | 1.9931 | .347 | .372 | 45 | N | .372 | 321 | 771 | 1.9371 | 1.9931 | .347 | .372 | 45 | N | 321 | 771 | 1.9371 | 1.9931 | 2.343 | | |
| 3 Cadillac.....Eight, 61, 62, 60, 75 | WR | 3140 | 5.515 | 1.686 | 1.500 | 45 | N | .342 | 335 | 145 | 1.921 | 1.578 | .210 | .341 | 45 | N | .341 | 335 | 145 | 1.921 | 1.578 | .210 | .341 | 45 | N | 321 | 771 | 1.9371 | 1.9931 | 2.210 | | |
| 4 Chevrolet.....Six | Own | ES | 6.220 | 1.640 | 1.250 | 30 | N | .341 | 294 | 58 | 1.821 | 1.505 | 2.125 | Own | ES | 4.854 | 1.458 | 1.203 | 30 | N | .340 | .311 | 59 | 132 | 1.821 | 1.505 | 1.921 | 1.578 | 2.125 | 2.125 | 4 | |
| 5 Chrysler.....Six, C-38 | Var | AS | 4.781 | 1.719 | 1.582 | 45 | ..... | .341 | .375 | 421 | 1.750 | 1.375 | 2.000 | ..... | (c) | 4.781 | 1.531 | 1.378 | 45 | Y | .339 | .375 | 421 | 111 | 1.750 | 1.375 | 1.921 | 1.578 | 2.000 | 2.000 | 5 | |
| 6 Chrysler.....Eight, C-38 | Var | AS | 5.875 | 1.531 | 1.408 | 45 | ..... | .341 | .375 | 421 | 1.750 | 1.375 | 2.000 | ..... | (c) | 5.875 | 1.344 | 1.219 | 45 | Y | .340 | .375 | 421 | 111 | 1.750 | 1.375 | 1.921 | 1.578 | 2.000 | 2.000 | 6 | |
| 7 Crosley.....Four, CC-46 | Own | 3140 | 4.000 | 1.171 | 1.050 | 45 | N | .312 | .238 | 28 | 1.500 | 1.285 | 1.843 | Own | 2112 | 4.000 | 1.048 | 0.928 | 45 | N | .312 | .238 | 28 | 48 | 1.500 | 1.285 | 1.921 | 1.578 | 1.843 | 1.843 | 7 | |
| 8 De Soto.....Six, S-11 | Var | AS | 4.781 | 1.719 | 1.582 | 45 | ..... | .341 | .375 | 421 | 1.750 | 1.375 | 2.000 | ..... | (c) | 4.781 | 1.531 | 1.378 | 45 | N | .339 | .375 | 421 | 111 | 1.750 | 1.375 | 1.921 | 1.578 | 2.000 | 2.000 | 8 | |
| 9 Dodge.....Six, D-24 | Var | AS | 4.781 | 1.531 | 1.408 | 45 | ..... | .341 | .375 | 421 | 1.750 | 1.375 | 2.000 | ..... | (c) | 4.781 | 1.408 | 1.281 | 45 | Y | .341 | .375 | 421 | 111 | 1.750 | 1.375 | 1.921 | 1.578 | 2.000 | 2.000 | 9 | |
| 10 Ford.....Eight, 89A | Own | AS | 4.757 | 1.507 | 1.345 | 45 | Y | .311 | .292 | 391/2 | 78 | 2.130 | 1.840 | 2.410 | Own | AS | 4.757 | 1.507 | 1.345 | 45 | Y | .310 | .292 | 391/2 | 78 | 2.130 | 1.840 | 2.130 | 1.840 | 2.410 | 2.410 | 10 |
| 11 Frazer.....Six F-47 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 11 | |
| 12 Hudson.....Six-81, 82 | Rich | 3140 | 5.344 | 1.375 | ..... | 45 | N | .341 | .343 | 40 | 80 | 2.343 | ..... | ..... | ..... | 5.344 | 1.375 | ..... | 45 | N | .339 | .343 | 40 | 80 | 2.343 | ..... | ..... | ..... | 2.343 | 2.343 | 12 | |
| 13 Hudson.....Eight-53, 54 | Rich | 3140 | 5.094 | 1.50 | ..... | 45 | N | .341 | .343 | 40 | 80 | 2.343 | ..... | ..... | ..... | 5.094 | 1.375 | ..... | 45 | N | .339 | .343 | 40 | 80 | 2.343 | ..... | ..... | ..... | 2.343 | 2.343 | 13 | |
| 14 Kaiser.....Six K-35 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 14 | |
| 15 Lincoln.....Twelve, 68H | Own | CSA | 4.748 | 1.537 | 1.377 | 45 | Y | .311 | .292 | 54 | 116 | 2.130 | 1.840 | 2.340 | Own | CSA | 4.748 | 1.537 | 1.377 | 45 | Y | .311 | .292 | 54 | 116 | 2.130 | 1.840 | 2.130 | 1.840 | 2.340 | 2.340 | 15 |
| 16 Mercury.....Eight, 68M | Own | AS | 4.757 | 1.507 | 1.345 | 45 | Y | .311 | .292 | 391/2 | 78 | 2.130 | 1.840 | 2.410 | Own | AS | 4.757 | 1.507 | 1.345 | 45 | Y | .310 | .292 | 391/2 | 78 | 2.130 | 1.840 | 2.130 | 1.840 | 2.410 | 2.410 | 16 |
| 17 Nash.....Six, 4640 | ..... | ..... | 4.781 | 1.468 | 1.312 | 45 | N | .341 | .312 | 37 | 80 | 2.093 | ..... | ..... | ..... | 4.781 | 1.281 | 1.125 | 45 | N | .341 | .312 | 37 | 80 | 2.093 | ..... | ..... | ..... | 2.093 | 2.093 | 17 | |
| 18 Nash.....Six, 4650 | ..... | ..... | 5.531 | 1.780 | 1.593 | 44 | N | .372 | .343 | 65 | 146 | 1.667 | 1.343 | 2.093 | ..... | 5.531 | 1.468 | 1.312 | 44 | N | .372 | .343 | 65 | 146 | 1.667 | 1.343 | 1.667 | 1.343 | 2.093 | 2.093 | 18 | |
| 19 Oldsmobile.....Six | Var | AS | 5.796 | 1.582 | 1.187 | 30 | N | .342 | .300 | 55 | 100 | 2.250 | 1.937 | 2.625 | Var | AS | 5.796 | 1.421 | 1.250 | 45 | N | .341 | .300 | 55 | 100 | 2.250 | 1.937 | 2.250 | 1.937 | 2.625 | 2.625 | 19 |
| 20 Oldsmobile.....Eight | Var | AS | 5.796 | 1.562 | 1.187 | 30 | N | .342 | .300 | 55 | 100 | 2.250 | 1.937 | 2.625 | Var | AS | 5.796 | 1.421 | 1.250 | 45 | N | .341 | .300 | 55 | 100 | 2.250 | 1.937 | 2.250 | 1.937 | 2.625 | 2.625 | 20 |
| 21 Packard.....Six, 2100 | ..... | CNS | 5.619 | 1.593 | ..... | 30 | ..... | .339 | .318 | 541/2 | 124 | 1.825 | 1.312 | ..... | ..... | 5.619 | 1.375 | ..... | 45 | ..... | .339 | .317 | 541/2 | 124 | 1.825 | 1.312 | 1.825 | 1.312 | 2.625 | 2.625 | 21 | |
| 22 Packard.....Eight, 2101, 2111 | ..... | CNS | 5.619 | 1.484 | ..... | 30 | ..... | .339 | .318 | 541/2 | 124 | 1.825 | 1.312 | ..... | ..... | 5.619 | 1.375 | ..... | 45 | ..... | .339 | .317 | 541/2 | 124 | 1.825 | 1.312 | 1.825 | 1.312 | 2.625 | 2.625 | 22 | |
| 23 Packard.....Eight, 2103, 2106 | ..... | CNS | 6.224 | 1.670 | ..... | 30 | ..... | .340 | .340 | 63 | 140 | 1.750 | 1.408 | ..... | ..... | 6.224 | 1.457 | ..... | 45 | ..... | .340 | .340 | 63 | 140 | 1.750 | 1.408 | 1.750 | 1.408 | 2.625 | 2.625 | 23 | |
| 24 Plymouth.....Six, P-16 | Var | AS | 4.781 | 1.531 | 1.406 | 45 | | .341 | .375 | 421/2 | 111 | 1.750 | 1.375 | 2.000 | | (e) | 4.781 | 1.406 | 1.281 | 45 | Y | .341 | .375 | 421/2 | 111 | 1.750 | 1.375 | 1.750 | 1.375 | 2.000 | 2.000 | 24 |
| 25 Pontiac.....Six, 1946-25 | Var | ..... | 5.718 | 1.593 | 1.375 | 30 | N | .312 | .296 | 591/2 | 101 | 1.906 | 1.593 | ..... | ..... | 5.718 | 1.468 | 1.312 | 45 | N | .312 | .296 | 591/2 | 101 | 1.906 | 1.593 | 1.906 | 1.593 | 2.000 | 2.000 | 25 | |
| 26 Pontiac.....Six, 1946-26 | Var | ..... | 5.718 | 1.593 | 1.375 | 30 | N | .312 | .296 | 591/2 | 101 | 1.906 | 1.593 | ..... | ..... | 5.718 | 1.468 | 1.312 | 45 | N | .312 | .296 | 591/2 | 101 | 1.906 | 1.593 | 1.906 | 1.593 | 2.000 | 2.000 | 26 | |
| 27 Pontiac.....Eight, 1946-27 | Var | ..... | 5.531 | 1.468 | 1.250 | 30 | N | .312 | .296 | 591/2 | 101 | 1.906 | 1.593 | ..... | ..... | 5.531 | 1.313 | 1.187 | 45 | N | .312 | .296 | 591/2 | 101 | 1.906 | 1.593 | 1.906 | 1.593 | 2.000 | 2.000 | 27 | |
| 28 Pontiac.....Eight, 1946-28 | Var | ..... | 5.531 | 1.468 | 1.250 | 30 | N | .312 | .296 | 591/2 | 101 | 1.906 | 1.593 | ..... | ..... | 5.531 | 1.343 | 1.187 | 45 | N | .312 | .296 | 591/2 | 101 | 1.906 | 1.593 | 1.906 | 1.593 | 2.000 | 2.000 | 28 | |
| 29 Studebaker.....Six, 5G | WR | CNS | 4.343 | 1.343 | 1.156 | 45 | N | .312 | .312 | 54 | 92 | 1.656 | 1.343 | 2.093 | WR | 2112 | 4.343 | 1.281 | 1.125 | 45 | N | .312 | .312 | 54 | 92 | 1.656 | 1.343 | 1.656 | 1.343 | 2.093 | 2.093 | 29 |

ABBREVIATIONS

(a) - X.C.R. or 2112
(b) - Stem 8750, Head N2120

(c) - Silchrome Steel
AS - Alloy Steel
Aus - Austenitic Steel
CNS - Chrome-Nickel Steel

CSA - Chrome-Silicon Alloy Steel
ES - Extruded Steel
N - No or None
T-R - Thompson Products or Wilcox-Rich Div.

Var - Various
WR - Wilcox-Rich Div.

† - Outer Valve Spring Only
Inner - 20 lb. 1.5502 in., valve closed
51 lb. 1.3125 in., valve open
1.9083 in. out of engine

1946 PASSENGER CARS

IGNITION SYSTEMS AND BATTERIES

| Line Number | PASSENGER CAR MAKE AND MODEL | IGNITION | | | | | | | | | | COIL | | SPARK PLUGS | | | | BATTERY | | | | | | | | | |
|-------------|------------------------------------|----------|------------|--------------------------------------|--|---------------------------------------|---------------|-------------------|------------------|--------------|-----------------|----------------------------|----------------|---------------|-------|-------|-------------|-----------|---------------------|-----------------------------------|-----------------|---------------------|---------------|-------------------|----------|-------------|----|
| | | Make | Model | Max. Automatic Advance (Eng. R.P.M.) | Inches Mercury Advance (± 1 In.) Required for Vacuum | Max. Vacuum Advance—Crankshaft (Deg.) | Breaker Point | | Cam Angle (Deg.) | Spark Occurs | Timing Marks On | Firing Order | Amperage Draw | | Make | Model | Thread Size | Gap (In.) | Ignition Cable Make | Capacity—Amp. Hrs. at 20 hr. Rate | Plates per Cell | Bench Charging Rate | | Terminal Grounded | Location | Line Number | |
| | | | | | | | Gap (In.) | Arm Tension (Oz.) | | | | | Engine Stopped | Engine Idling | | | | | | | | Start (Amp.) | Finish (Amp.) | | | | |
| 1 | Buick.....Eight, 50 | DR | 1110801 | 26-3000 | 6.00 | 10-12 | .015 | 19-23 | 31 | 4BT | Fly | 1,6,2,5,8,3,7,4 | 4.5 | 2.5 | DR | AC | 43 | 14 | .025 | Pak | 100 | 15 | 7 | 7 | Neg | UH | 1 |
| 2 | Buick.....Eight, 70 | DR | 1110801 | 26-3000 | 6.00 | 10-12 | .015 | 19-23 | 31 | 6BT | Fly | 1,6,2,5,8,3,7,4 | 4.5 | 2.5 | DR | AC | 43 | 14 | .025 | Pak | 120 | 17 | 7 | 7 | Neg | UH | 2 |
| 3 | Cadillac.....Eight, 61, 62, 60, 75 | DR | 1110807 | 24-4000 | 6.50 | 18 | .015 | 19-23 | 31 | 5BT | VD | 1,8,7,3,6,5,4,2 | 4.4 | 2.2 | DR | AC | 104 | 10 | .030 | Pak | 115 | 17 | 10 | 8 | Neg | RF | 3 |
| 4 | Chevrolet.....Six | DR | 1110090 | 39.5-3450 | 7.00 | 20 | .018 | 17-21 | 39 | 6BT | Fly | 1,5,3,6,2,4 | 4.5 | 2.5 | DR | AC | M8 | 10 | .040 | DR | 100 | 15 | 7 | 7 | Neg | RF | 4 |
| 5 | Chrysler.....Six, C-38 | DR | 26-3000 | 16-20 | 18-20 | 10-12 | .020 | 17-20 | 36 | 2AT | VD | 1,5,3,6,2,4 | 5.0 | 2.3 | DR | AL | 135 | 19 | .025 | WII | 120 | 17 | | | Pos | UL | 5 |
| 6 | Chrysler.....Eight, C-39 | DR | 26-3500 | 14-18 | 14-18 | 17-20 | .020 | 17-20 | 29 | 2AT | VD | 1,6,2,5,8,3,7,4 | 5.0 | 2.3 | DR | AL | 135 | 19 | .025 | AL | 135 | 19 | | | Pos | UL | 6 |
| 7 | Crosley.....Four, CC-46 | AL | IGW-4181 | 20-2800 | No | | .020 | 17-20 | 46 | 12BT | Fly | 1,3,4,2 | 5.0 | 2.0 | AL | A-7 | 14 | 14 | .025 | OEx | 80 | 13 | 8 | 4 | Pos | UL | 7 |
| 8 | De Soto.....Six, S-11 | | 24-2800 | 10-14 | 10-14 | 17-20 | .020 | 17-20 | 36 | TC | VD | 1,5,3,6,2,4 | 5.0 | 2.3 | | | 14 | 14 | .025 | WII | 110 | 17 | | | Pos | UL | 8 |
| 9 | Dodge.....Six, D-24 | | 22-2250 | 15-19 | 15-19 | 17-20 | .020 | 17-20 | 36 | 2AT | VD | 1,5,3,6,2,4 | 5.0 | 2.3 | | | 14 | 14 | .025 | AL | 105 | 15 | | | Pos | UL | 9 |
| 10 | Ford.....Eight, 69A | Own | 59A | 22-3400 | | 22 | .015 | 20-24 | 36 | 4BT | No | 1,5,4,8,6,3,7,2 | 7.0 | 3.0 | CH | H-10 | 14 | 14 | .025 | Ex | 120 | 17 | 8 | 4 | Pos | UH | 10 |
| 11 | Frazer.....Six F-47 | | | | | | | | | | | | | | | AL | 14 | 14 | | AL | 105 | 15 | | | | UH | 11 |
| 12 | Hudson.....Six-51, 52 | AL | IGW-4203-A | 23-..... | 15 | .020 | .017 | 34 | (c) | Fly | TC | 1,5,3,6,2,4 | 4.5 | 2.5 | CH | J-9 | 14 | 14 | .038 | Ex | 96 | 17 | | | Pos | UL | 12 |
| 13 | Hudson.....Eight-53, 54 | AL | IGP-4008-A | 35-..... | 15 | .017 | 30½ | 30½ | TC | Fly | TC | 1,6,2,5,8,3,7,4 | 4.5 | 2.5 | CH | J-9 | 14 | 14 | .039 | Ex | 108 | 19 | | | Pos | UL | 13 |
| 14 | Kaiser.....Six K-85 | | | | | | | | | | | | | | | | 14 | 14 | | WII | 90 | 15 | | | | UH | 14 |
| 15 | Lincoln.....Twelve, 66H | Own | 23-3300 | ..... | ..... | .015 | ..... | 36 | 2BT | No | ..... | 1,4,9,8,5,2,11,10,3,6,7,12 | 7.0 | 5.0 | CH | H-10 | 14 | .027 | Ex | 120 | 17 | 8 | 4 | Pos | UR | 15 | |
| 16 | Mercury.....Eight, 69M | Own | 22-3400 | ..... | 22 | .015 | 20-24 | 36 | 4BT | ..... | ..... | 1,5,4,8,6,3,7,2 | 7.0 | 3.0 | CH | H-10 | 14 | .025 | Ex | 120 | 17 | 8 | 4 | Pos | UH | 16 | |
| 17 | Nash.....Six, 4640 | AL | IGN-4184 | 21-2800 | 17 | .020 | 18 | TC | 4BT | VD | VD | 1,5,3,6,2,4 | ..... | ..... | AL | A-7 | 14 | .025 | AL | 90 | 13 | ..... | ..... | Pos | UF | 17 | |
| 18 | Nash.....Six, 4660 | AL | IGS-4205 | 24 | 12 | .020 | 17-20 | 48T | 4BT | VD | VD | 1,5,3,6,2,4 | ..... | ..... | AL | 45 | 14 | .025 | AL | 105 | 15 | ..... | ..... | Pos | UF | 18 | |
| 19 | Oldsmobile.....Six | DR | 1110213 | 22-4000 | 8.50 | 12 | .020 | 17-21 | 35 | TC | Fly | 1,5,3,6,2,4 | 4.5 | 2.0 | AC | 43 | 14 | .040 | DR | 100 | 15 | 12.5 | 4.50 | Neg | UH | 19 | |
| 20 | Oldsmobile.....Eight | DR | 1110608 | 22-3600 | 7.50 | 12 | .015 | 19-23 | 31 | 2BT | Fly | 1,6,2,5,8,3,7,4 | 4.5 | 2.0 | AC | 43 | 14 | .030 | DR | 120 | 17 | 12.5 | 5.25 | Neg | UH | 20 | |
| 21 | Packard.....Six, 2100 | (a) | IGP-4502A | 600 | 8.00 | .020 | .015 | 19-23 | 48T | 4BT | 4BT | 1,5,3,6,2,4 | 5.0 | 2.7 | (b) | (b) | 10 | .027 | WA | 100 | 15 | ..... | ..... | Pos | ..... | 21 | |
| 22 | Packard.....Eight, 2101, 2111 | AL | IGP-4502A | 650 | 8.00 | .020 | .015 | 19-23 | 58T | 4BT | 4BT | 1,6,2,5,8,3,7,4 | 5.0 | 2.4 | (b) | (b) | 10 | .027 | WA | 100 | 15 | ..... | ..... | Pos | ..... | 22 | |
| 23 | Packard.....Eight, 2103, 2106 | AL | IGT-4102 | 500 | 8.00 | .015 | .015 | 19-23 | 48T | 4BT | 4BT | 1,6,2,5,8,3,7,4 | 5.0 | 2.4 | (b) | (b) | 10 | .027 | AL | 120 | 17 | ..... | ..... | Pos | ..... | 23 | |
| 24 | Plymouth.....Six, P-15 | ..... | 20-2600 | 16-22 | ..... | .020 | ..... | 36 | TC | VD | VD | 1,5,3,6,2,4 | 5.0 | 2.3 | ..... | ..... | 14 | .025 | AL | 95 | 15 | ..... | ..... | Pos | UL | 24 | |
| 25 | Pontiac.....Six, 1946-25 | DR | 647-D | 28.5-4000 | 8.00 | 15 | .020 | 17-21 | 37 | 4BT | Fly | 1,5,3,6,2,4 | ..... | ..... | AC | 45 | 14 | .025 | Pak | 100 | 15 | 7.0 | 7.0 | Neg | UH | 25 | |
| 26 | Pontiac.....Six, 1946-26 | DR | 647-D | 28.5-4000 | 8.00 | 15 | .020 | 17-21 | 37 | 4BT | Fly | 1,5,3,6,2,4 | ..... | ..... | AC | 45 | 14 | .025 | Pak | 100 | 15 | 7.0 | 7.0 | Neg | UH | 26 | |
| 27 | Pontiac.....Eight, 1946-27 | DR | 1110804 | 28-4200 | 8.00 | 20 | .020 | 19-23 | 31 | 4BT | Fly | 1,6,2,5,8,3,7,4 | 4.5 | 1.8 | AC | 45 | 14 | .025 | Pak | 100 | 15 | 7.0 | 7.0 | Neg | UH | 27 | |
| 28 | Pontiac.....Eight, 1946-28 | DR | 1110804 | 25-4200 | 8.00 | 20 | .020 | 19-23 | 31 | 4BT | Fly | 1,6,2,5,8,3,7,4 | 4.5 | 1.8 | AC | 45 | 14 | .025 | Pak | 100 | 15 | 7.0 | 7.0 | Neg | UH | 28 | |
| 29 | Studebaker.....Six, 5G | AL | IGC-4801 | 14-2800 | 4.00 | 16 | .020 | 17-20 | 35 | 2BT | Fly | 1,5,3,6,2,4 | 4.5 | 1.0 | CH | J-9 | 14 | .025 | AW | 90 | 15 | 5.7 | 5.7 | Pos | UH | 29 | |

ABBREVIATIONS:

(a)—Auto-Lite IGC-4505 or Dash-Rite 1110909
(b)—AC-104 or Champion Y4A
(c)— $\frac{1}{2}$ in. BT

AC—AC Spark Plug Div.
AEN—Auto-Lite, Enmark Battery Div.; and National Battery Co.
AL—Taco Electric Auto-Lite Co.
AT—Alto Electric
AW—American Enamel Magnet Wire Co.

BT—Before Top Center
CH—Champion Spark Plug Co.
CR—Delco-Remy Div.
EX—Excess Wire Corp.
FL—Flintco Electric Co.
Nat.—National Battery Co.

Neg—Negative
No—No or None
OER—Excess Wire Corp. Material,
Pack—Packard Corporation
Pos—Positive

RF—Right Side Under Front Fender
TC—Top Center
UF—Under Front Seat
UH—Under Hood, Left Side
UL—Under Hood, Right Side
UR—Under Hood, Right Side

Var—Various
VD—Vibration Damper
WA—Willard Storage Battery Co. or
WII—Willard Electric Auto-Lite Co.
WII—Willard Storage Battery Co.

MOTOR AGE PICTURE GALLERY

Here's a novel costume for the Easter parade. Cute Barbara Bates, Hollywood starlet, models this fetching bunny costume. It does away with the problem of what to buy in the way of Easter togs. There's a dearth of eggs in the photo, but then there's some talk that egg production will be increased this year.



UR—Under Hood, Right Side

Pak—Packard Electric Co.
Fly—Flywheel
Pos—Positive

AL—The Electric Auto-Lite Co.
AT—After Top Center
AW—American Enamel Magnet Wire Co.

AL—The Electric Auto-Lite Co.
AT—After Top Center
AW—American Enamel Magnet Wire Co.

(0)—Auto-Lite Co. 1110092
(1)—AC-104 Champion Y4A
(2)—1/2 in. BT

MOTOR AGE

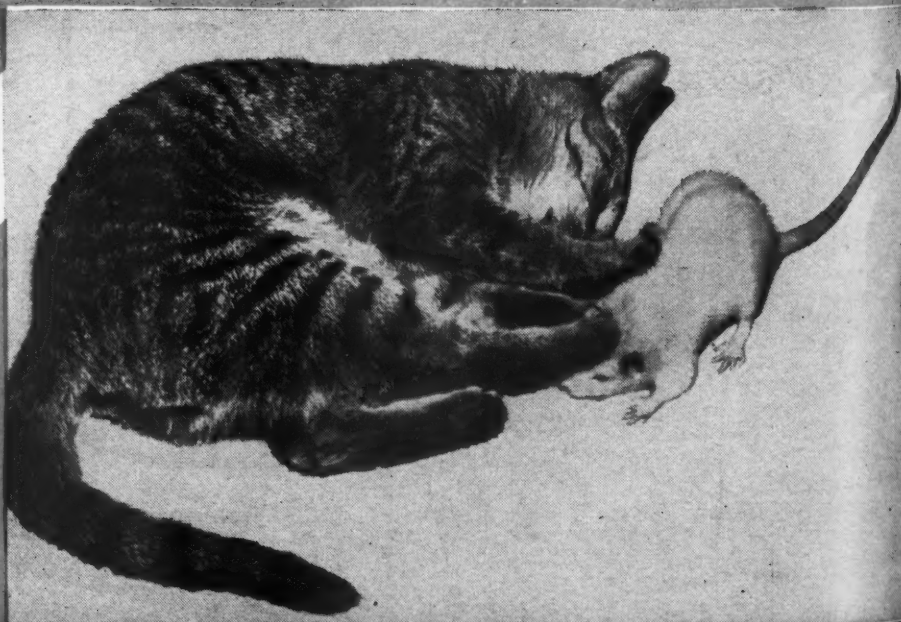


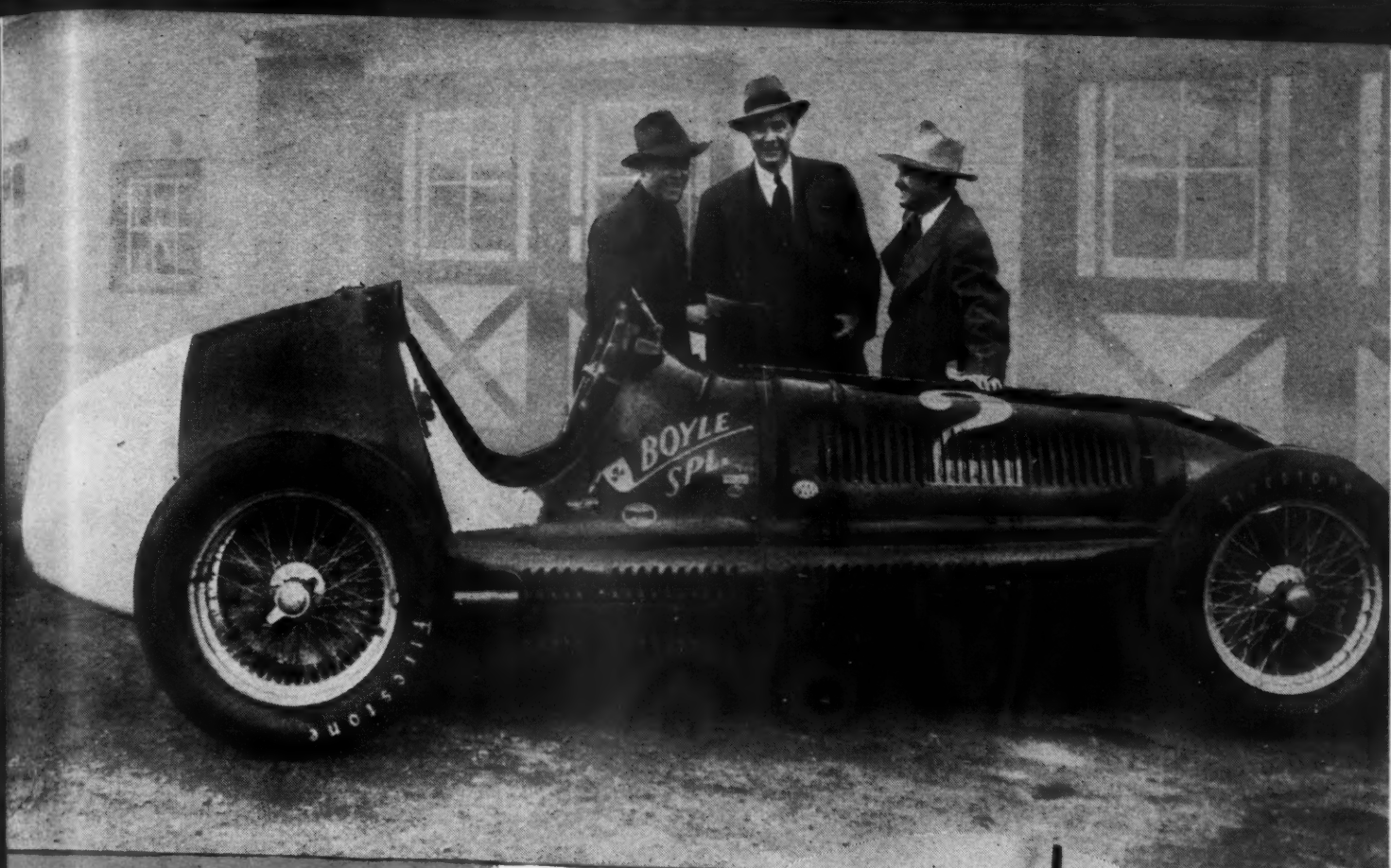
Built from scrap airplane parts, this streamlined auto, designed and built by Jack Norvall, shown here, is said to be able to do 131 miles per hour. Its chassis has been lengthened to 18 feet, and the engine is located at the rear of the vehicle. Two radiators are incorporated in the car's cooling system.



Motorists in Buffalo, N. Y., know quite well which side their gasoline is buttered on when they drive into this station, featuring a pound of butter at 55c with each purchase of 10 gallons of gas. Here, Charles Gerhardt waits on Mrs. Clayton Smith who knows a bargain when she sees it.

Remember the adage: "When the cat's away—" ? Well, here's a pet rat who seems to enjoy romping with the family cat "Bella." Both pets are owned by Mrs. Ruth Caudle of Pontiac, Mich. "Pedro" scampers around in perfect safety while "Bella" takes time out for a quick nap.



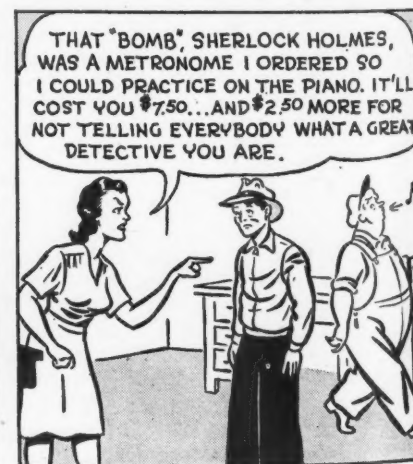
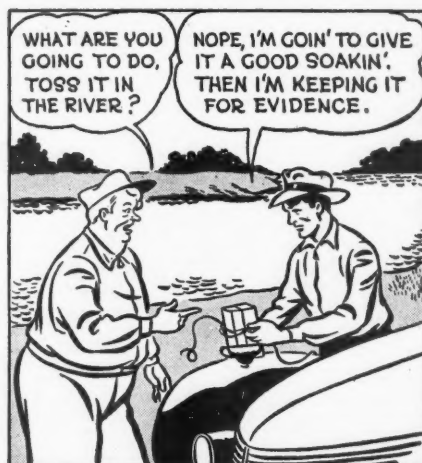
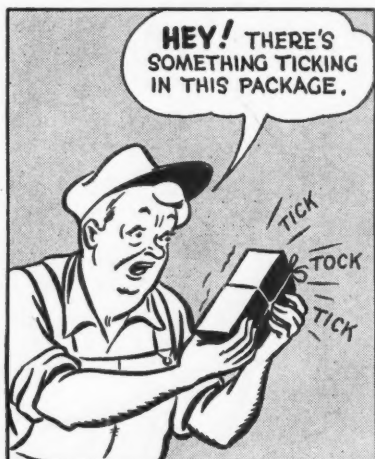


Feverish activity is under way in preparation for the 500-mile Memorial Day Race at Indianapolis. Cotton Henning (left) gives Tony Hulman (center) new owner of the Indianapolis Speedway the entry blank for one of the two "Boyle Specials" which are to appear among the entries. Wilbur Shaw, three-time winner in the Indianapolis races, is shown at the right.

This is not a new spring creation for hats, but a genuine, two-tube built-in radio, complete with batteries, antenna, dials and head-set. Worn by Olin Mumford, Atlanta, Ga., high school student, it is viewed by Pat Langley, his collaborator in the building of the set.



This curious-looking vehicle is known as a "Weep" and was built by Edward G. Hammond, Newton, Mass., for use as a runabout. Parts from 16 cars, a tractor, mowing machine, and a sailboat went into the production of the "Weep." Hammond says the vehicle will average 50 miles to the gallon and attain the speed of 40 miles per hour.



TIMING GEARS, VALVE TIMING AND LUBRICATION

| Line Number | PASSENGER CAR MAKE AND MODEL | CRANK- SHAFT GEAR OR SPROCKET | | CAM- SHAFT GEAR OR SPROCKET | | TIMING CHAIN | | | VALVE CLEARANCE (Inches) | | | | VALVE TIMING (Degrees) | | | | LUBRICATION | | | | | | | | | | | Line Number | | | |
|-------------|------------------------------------|--|----------|--------------------------------------|----------|--------------|-------------|-------|-----------------------------|-------|-----------|--------|---------------------------|--------|--------|-----------------|-------------|---------------|-----------------|-----------|-------------------|---------------------------------------|---|----------------------------------|----------------------------|---------------------------|-----------------------------|-------------|-----------------|-------------------------|-----------|
| | | Make | Material | Make | Material | Make | Width (in.) | Pitch | Intake | | Exhaust | | Opens | Closes | Type | Oil Pressure to | | | | | | Normal Oil Pressure Lbs. at M.P.H. | Opens Relief Valve Lbs. Pressure Which | Crankcase Capacity Dry—(Qts.) | Oil Pressure Gauge Make | Floating Type Oil Make | External Oil Filter Make | | Oil Cooler Make | | |
| | | | | | | | | | Number of Links | Make | Operating | Timing | | | | Operating | Timing | Main Bearings | Connecting Rods | Whirlpins | Camshaft Bearings | | | | | | | | | Timing Gear or Chain | Pump Type |
| 1 | Buick.....Eight, 50 | LB | 1112 | LB | 1112 | LB | 48 | 1 | .015H | .015H | .015H | .015H | 22AT | 68AB | 55BB | P | Y | Y | Y | Y | N | Pv | Ge | 45-35 | 45 | 6½ | AC | Yes | No | 1 | |
| 2 | Buick.....Eight, 70 | LB | 1112 | LB | 1112 | LB | 50 | 1 | .015H | .015H | .015H | .015H | 25AT | 71AB | 56BB | P | Y | Y | Y | Y | N | Pv | Ge | 45-35 | 45 | 8 | AC | Yes | No | 2 | |
| 3 | Cadillac.....Eight, 61, 62, 60, 75 | Own | 1115 | Own | 1115 | LB | 62 | 1½ | HA | HA | HA | HA | 10AT | 42AB | 52BB | P | Y | Y | Y | Y | Y | Pv | Ge | 30-30 | 30 | 7 | AC | Yes | No | 3 | |
| 4 | Chevrolet.....Six | Own | Steel | Var | BF | Tim | 48 | Gear | .008H | .013H | .008H | .013H | 5AT | 35AB | 46BB | PS | Y | PS | N | Y | N | Pv | Ge | 14-38 | 60 | 5½ | AC | No | No | 4 | |
| 5 | Chrysler.....Six, C-38 | ..... | HMS | ..... | CI | ..... | 47 | 1 | .008H | .014 | .008H | .014 | 6AT | 44AB | 50BB | P | Y | Y | Y | Y | Y | Pv | Ge | 43 | 5 | 5 | ..... | Yes | ..... | 5 | |
| 6 | Chrysler.....Eight, C-39 | ..... | HMS | ..... | CI | ..... | 47 | 1½ | .008H | .011 | .008H | .011 | 12AT | 50AB | 40BB | P | Y | Y | Y | Y | Y | Pv | Ge | 43 | 6 | 6 | ..... | Yes | ..... | 6 | |
| 7 | Crosley.....Four, CC-46 | Own | 1040 | Own | 1040 | Tim | 47 | Gear | .007C | ..... | .007C | ..... | 5AT | 50AB | 50BB | P | Y | Y | Y | Y | N | Pv | Ge | 40-20 | 40 | 4 | SW | No | Fm | 7 | |
| 8 | De Soto.....Six, S-11 | ..... | HMS | ..... | CI | ..... | 48 | 1 | .008H | .014 | .008H | .014 | 6AT | 44AB | 50BB | P | Y | Y | Y | Y | Y | Pv | Ge | 43 | 5 | 5 | ..... | Yes | ..... | 8 | |
| 9 | Dodge.....Six, D-24 | ..... | HMS | ..... | CI | ..... | 48 | 1 | .008H | .014 | .008H | .014 | 6AT | 44AB | 50BB | P | Y | Y | Y | Y | Y | Pv | Ge | 43 | 5 | 5 | ..... | Yes | ..... | 9 | |
| 10 | Ford.....Eight, 69A | Own | CI | Own | AI | Tim | 47 | Gear | .011 | .015 | .011 | .015 | 6AT | 44AB | 48BB | P | Y | Y | Y | Y | N | Sp | Ge | 55-60 | 57 | 5½ | KS | No | Fm | 10 | |
| 11 | Frazier.....Six F-47 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 11 | |
| 12 | Hudson.....Six-51, 52 | Own | CI | CA | LBA | Tim | 47 | Gear | .008H | ..... | .008H | ..... | 18.6AT | 60AB | 50BB | (a) | N | N | N | N | N | Sp | OP | 3-... | 3 | 6 | ..... | No | Mic | Own | 12 |
| 13 | Hudson.....Eight-53, 54 | Own | CI | CA | LBA | Tim | 47 | Gear | .008H | ..... | .008H | ..... | 18.6AT | 60AB | 50BB | (a) | N | N | N | N | N | Sp | OP | 3-... | 3 | 9 | ..... | No | Mic | Own | 13 |
| 14 | Kaiser.....Six K-85 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 14 | |
| 15 | Lincoln.....Twelve, 66H | Own | Steel | Own | AI | Tim | 47 | Gear | HA | HA | HA | HA | 8.1AT | 35.6AB | 50.9BB | P | Y | Y | Y | Y | Y | Pv | Ge | 50-65 | 50 | 6 | KS | No | Fm | No | 15 |
| 16 | Mercury.....Eight, 69M | Own | CI | Own | AI | Tim | 47 | Gear | .011 | .015 | .011 | .015 | 6AT | 44AB | 48BB | P | Y | Y | Y | Y | N | Sp | Ge | 55-60 | 57 | 5½ | KS | No | Fm | No | 16 |
| 17 | Nash.....Six, 48-40 | Own | Steel | Own | CI | ..... | 60 | 1½ | .015 | .019 | .015 | .019 | 10AT | 50AB | 48BB | P | Y | Y | Y | Y | Y | Pv | Ge | 30-20 | 50 | 5 | KS | No | No | No | 17 |
| 18 | Nash.....Six, 4600 | Own | Steel | Own | CI | ..... | 60 | 1½ | .015 | .019 | .015 | .019 | 5½AT | 70½AB | 49½BB | P | Y | Y | Y | Y | Y | Pv | Ge | 30-20 | 30 | 6 | KS | No | Pur | No | 18 |
| 19 | Oldsmobile.....Six | Whit | X-1314 | Whit | CI | Whit | 47 | 1½ | .008H | .012H | .008H | .012H | 5AT | 45AB | 45BB | P | Y | Y | Y | Y | N | Pv | Ge | 30-... | 30 | 5 | AC | No | No | No | 19 |
| 20 | Oldsmobile.....Eight | LB | X-1315 | LB | CI | LB | 47 | 1½ | .008H | .012H | .008H | .012H | 10AT | 35AB | 45BB | P | Y | Y | Y | Y | N | Pv | Ge | 30-... | 30 | 6 | AC | No | No | No | 20 |
| 21 | Packard.....Six, 2100 | ..... | Steel | ..... | CI | MR | 58 | 1½ | .007H | .014 | .007H | .014 | 5AT | 39AB | 45BB | P | Y | Y | Y | Y | Y | Pv | Ge | 40-... | 40 | 5 | ..... | Yes | No | Yes | 21 |
| 22 | Packard.....Eight, 2011, 2111 | ..... | Steel | ..... | CI | MR | 58 | 1½ | .007H | .014 | .007H | .014 | 5AT | 39AB | 45BB | P | Y | Y | Y | Y | Y | Pv | Ge | 40-... | 40 | 5½ | ..... | Yes | No | Yes | 22 |
| 23 | Packard.....Eight, 2103, 2106 | ..... | Steel | ..... | CI | MR | 62 | 1½ | HA | HA | HA | HA | 10AT | 51AB | 49BB | P | Y | Y | Y | Y | Y | Pv | Ge | 50-... | 50 | 7 | ..... | Yes | Yes | Yes | 23 |
| 24 | Plymouth.....Six, P-15 | ..... | HMS | ..... | CI | ..... | 48 | 1 | .008H | .014 | .008H | .014 | 6AT | 44AB | 50BB | P | Y | Y | Y | N | Y | Pv | Ge | 42 | 5 | 5 | ..... | Yes | ..... | ..... | 24 |
| 25 | Pontiac.....Six, 1946-25 | Own | Steel | Own | CNI | Mer | 56 | 1 | .012H | .012 | .012H | .012 | 5AT | 39AB | 45BB | P | Y | Y | Y | Y | N | Pv | Ge | 37-40 | 40 | 6 | AC | No | No | No | 25 |
| 26 | Pontiac.....Six, 1946-26 | Own | Steel | Own | CNI | Mer | 56 | 1 | .012H | .012 | .012H | .012 | 5AT | 39AB | 45BB | P | Y | Y | Y | Y | N | Pv | Ge | 37-40 | 40 | 6 | AC | No | No | No | 26 |
| 27 | Pontiac.....Eight, 1946-27 | Own | Steel | Own | CNI | Mer | 56 | 1 | .012H | .012 | .012H | .012 | 5AT | 39AB | 45BB | P | Y | Y | Y | Y | N | Pv | Ge | 37-40 | 40 | 6 | AC | No | No | No | 27 |
| 28 | Pontiac.....Eight, 1946-28 | Own | Steel | Own | CNI | Mer | 56 | 1 | .012H | .012 | .012H | .012 | 5AT | 39AB | 45BB | P | Y | Y | Y | Y | N | Pv | Ge | 37-40 | 40 | 6 | AC | No | No | No | 28 |
| 29 | Studebaker.....Six, 5G | Own | CI | CD | Cel | Tim | 47 | Gear | .016C | .020 | .016C | .020 | 10AT | 49AB | 54BB | P | Y | Y | Y | Y | Y | Pv | Ge | 40-25 | 40 | 5 | SW | Yes | No | No | 29 |

ABBREVIATIONS:
(a)—Duoflo, splash
AB—After Bottom Center
AC—AC Spark Plug Div.
AI—Aluminum
AT—After Top Center
BB—Before Bottom Center
BT—Before Top Center
C—Cold
CA—Continental Diamond Fibre Co. and
Aluminum Co. of America
CD—Continental Diamond Fibre Co.
Cel—Celoron with Steel Hub
CI—Cast Iron
CNI—Chrome-Nickel Steel
G—Gear
H—Hot
HA—Hydraulic or Hydraulic Automatic
Adjustment
HMS—High Manganese Steel
K—King-Seely Corp.
LB—Unit-Belt Co.
LBA—Laminated Bakelite or Aluminum
Mic—Michiana
MR—Morse Chain Co.
N—No or None
OP—Oxidizing Plunger
P—Pressure
PS—Pressure Stream and Splash
Pv—Positive
Sp—Splash
SW—Stewart-Warner Corp.
TC—Top Center
Ver—Various
Whit—Whitney Chain and Mfg. Co.
Y—Yes

1946 PASSENGER CARS

FUEL AND COOLING SYSTEMS

| FUEL SYSTEM | | | | | | | | | | COOLING SYSTEM | | | | | | | | | | | | | | | Line Numbers | | | | | | | |
|--------------|------------------------------------|----------------------|------|-------|------------|------------|-------|-----------------------|----------------------|------------------|--------------|------------|-------|-------------|-----------------|------------------------|----------------------------|---------------|--------|---------------------------|---------------------------|-----------------------|-----------------------|--------------|-----------------------|--------------|----------|---------------------|----------------------|------------------|--------------|----------|
| Line Numbers | PASSENGER CAR MAKE AND MODEL | Tank Capacity (Gal.) | Feed | | Carburetor | | | Manifold Heat Control | Automatic Choke—Make | Air Cleaner—Make | Muffler—Make | Water Pump | | | Thermostat—Make | Pressure Relief Valve? | By-pass for Recirculation? | Radiator Core | | Capacity of System (Qts.) | Full Length Water Jacket? | Around All Cylinders? | Lower Hose | | Upper Hose | | Fan Belt | | | | Line Numbers | |
| | | | Type | Make | Model No. | Size (In.) | Type | | | | | Type | Drive | Packing Nut | | | | Type | Make | | | | Inside Diameter (In.) | Length (In.) | Inside Diameter (In.) | Length (In.) | Make | Angle of Vee (Deg.) | Outside Length (In.) | Width—Max. (In.) | | Fan—Make |
| 1 | Buick.....Eight, 50 | 19 | CP | AC | S-C | (a) | 1 | DD | Aut | S-C | AC | Ce | FB | No | Har | Yes | Yes | VC | 13 | 13 | No | Yes | 1 1/2 | ET | 1 1/2 | ET | ET | ET | ET | Var | 1 | |
| 2 | Buick.....Eight, 70 | 19 | CP | AC | S-C | (b) | 1 1/2 | DD | Aut | S-C | AC | Ce | FB | No | Har | Yes | Yes | VC | 16 1/2 | 16 1/2 | No | Yes | 1 1/2 | ET | 1 1/2 | ET | ET | ET | ET | Var | 2 | |
| 3 | Cadillac.....Eight, 61, 62, 60, 75 | (c) | CP | AC | S-C | (d) | 1 1/2 | DD | No | S-C | Wal | Ce | FB | No | Dole | No | Yes | TF | 25 | 25 | Yes | Yes | 1 1/2 | 8 1/2 | 1 1/2 | (e) | 34 1/2 | 34 1/2 | 34 | Ga | Hay | 3 |
| 4 | Chevrolet.....Six | 16 | CP | AC | Car | WI-574S | 1 1/2 | SD | Aut | No | Var | Ce | FB | No | Har | No | No | Cel | 15 | 15 | Yes | Yes | 1 1/2 | 4 1/2 | 1 1/2 | 6 1/2 | 42 1/2 | 42 1/2 | 42 1/2 | Var | Own | 4 |
| 5 | Chrysler.....Six, C-38 | 17 | CP | ..... | ..... | ..... | 1 1/2 | SD | Aut | Sie | ..... | Ce | FB | No | ..... | No | Yes | Cel | 18 | 18 | Yes | Yes | 1 1/2 | 6 1/2 | 1 1/2 | 8 1/2 | 48 1/2 | 48 1/2 | 48 1/2 | ..... | ..... | 5 |
| 6 | Chrysler.....Eight, C-39 | 20 | CP | ..... | ..... | ..... | 1 1/2 | SD | Aut | Sie | ..... | Ce | FB | No | ..... | Yes | Yes | TF | 26 | 26 | Yes | Yes | 1 1/2 | 6 1/2 | 1 1/2 | 9 | 48 1/2 | 48 1/2 | 48 1/2 | ..... | ..... | 6 |
| 7 | Crosley.....Four, CC-46 | 6 1/2 | CP | AC | TII | DY-9B | 3/4 | SD | No | No | Own | ..... | FC | No | Fu | No | No | TF | 5 | 5 | No | Yes | 1 1/2 | 12 1/2 | 1 1/2 | 13 1/2 | 33 1/2 | 33 1/2 | 33 1/2 | Ga | Own | 7 |
| 8 | De Soto.....Six, S-11 | 17 | CP | ..... | ..... | ..... | 1 1/2 | SD | Aut | Sie | ..... | Ce | FB | No | ..... | No | Yes | Cel | 17 | 17 | Yes | Yes | 1 1/2 | 6 | 1 1/2 | 9 1/2 | 46 1/2 | 46 1/2 | 46 1/2 | ..... | ..... | 8 |
| 9 | Dodge.....Six, D-24 | 17 | CP | ..... | ..... | ..... | 1 1/2 | SD | Aut | Sie | ..... | Ce | FB | No | ..... | No | Yes | Cel | 15 | 15 | Yes | Yes | 1 1/2 | 6 | 1 1/2 | 9 1/2 | 49 1/2 | 49 1/2 | 49 1/2 | ..... | ..... | 9 |
| 10 | Ford.....Eight, 69A | 17 | CP | AC | Hol | 94 | 1 | DD | No | No | NS | Ce | GB | No | D-B | No | Yes | TF | 22 | 22 | Yes | Yes | 1 1/2 | 6 | 1 1/2 | 21 | 55 | 55 | 32 | Day | Sch | 10 |
| 11 | Frazer.....Six F-47 | 21 | CP | AC | Car | ..... | 1 1/2 | ..... | Car | ..... | Mar | ..... | ..... | ..... | Yes | ..... | ..... | McC* | ..... | ..... | ..... | ..... | 1 1/2 | ..... | 1 1/2 | ..... | ..... | ..... | ..... | ..... | 11 | |
| 12 | Hudson.....Six, S-1 | 18 1/2 | CP | AC | Car | WDO-307-S | 1 | DD | Aut | Car | Old | Ce | FB | No | Ful | No | No | Cel | 13 | 13 | No | No | 1 1/2 | 8 1/2 | 1 1/2 | 10 | 44 1/2 | 44 1/2 | 46 | Go-G | Own | 12 |
| 13 | Hudson.....Eight, S-5, 54 | 18 1/2 | CP | AC | Car | WDO-302-S | 1 1/2 | DD | Aut | Car | Old | Ce | FB | No | Ful | No | (f) | McC | 18 | 18 | No | No | 1 1/2 | 7 1/2 | 1 1/2 | 7 1/2 | 44 1/2 | 44 1/2 | 46 | Go-G | Own | 13 |
| 14 | Kaiser.....Six K-85 | 21 | CP | AC | Car | ..... | 1 1/2 | ..... | Car | ..... | Mar | ..... | ..... | ..... | ..... | ..... | ..... | McC* | ..... | ..... | ..... | ..... | 1 1/2 | ..... | 1 1/2 | ..... | ..... | ..... | ..... | ..... | 14 | |
| 15 | Lincoln.....Twelve, 68H | 19 1/2 | CP | AC | Hol | ..... | 1 | DD | Aut | No | NS | Ce | GB | No | BB | No | No | TF | 27 | 27 | Yes | Yes | 1 1/2 | 10 1/2 | 1 1/2 | 6 | 55 | 55 | 32 | Day | Sch | 15 |
| 16 | Mercury.....Eight, 69A | 17 | CP | AC | Hol | 94 | 1 | DD | No | No | NS | Ce | GB | No | D-B | No | Yes | TF | 22 | 22 | Yes | Yes | 1 1/2 | 6 | 1 1/2 | 21 | 55 | 55 | 32 | Day | Sch | 16 |
| 17 | Nash.....Six, 4640 | 20 | CP | AC | Car | WAI-611S | 1 1/2 | SD | Aut | Car | Wal | Ce | FB | Yes | Ful | Yes | No | TF | 14 | 14 | Yes | Yes | 1 1/2 | 3 1/2 | 1 1/2 | 15 | 41 1/2 | 41 1/2 | 32 | ..... | Sch | 17 |
| 18 | Nash.....Six, 4660 | 20 | CP | AC | Car | ..... | 1 1/2 | SD | Aut | Car | Wal | Ce | FB | Yes | Ful | Yes | No | TF | 17 | 17 | Yes | Yes | 1 1/2 | 3 1/2 | 1 1/2 | 15 | 42 1/2 | 42 1/2 | 32 | ..... | Sch | 18 |
| 19 | Oldsmobile.....Six | 19 | CP | AC | Car | WI | 1 1/2 | SD | Aut | Car | Var | Ce | FB | No | Har | No | Yes | TV | 18 1/2 | 18 1/2 | Yes | Yes | 1 1/2 | 13 | 1 1/2 | 8 | 44 1/2 | 44 1/2 | 32 | Var | Own | 19 |
| 20 | Oldsmobile.....Eight | 19 | CP | AC | Car | WDO | 1 1/2 | SD | Aut | Car | Var | Ce | FB | No | Har | No | Yes | TV | 20 1/2 | 20 1/2 | Yes | Yes | 1 1/2 | 15 | 1 1/2 | 7 1/2 | 44 1/2 | 44 1/2 | 32 | Var | Own | 20 |
| 21 | Packard.....Six, 2100 | 17 | CP | AC | Car | WAI-530S | 1 1/2 | SD | Aut | Car | ..... | Ce | FB | No | ..... | ..... | ..... | TF | 14 | 14 | ..... | ..... | 1 1/2 | 12 1/2 | 1 1/2 | 3 1/2 | 49 1/2 | 49 1/2 | 42 | ..... | Own | 21 |
| 22 | Packard.....Eight, 2101, 2111 | 17 | CP | AC | Car | WDO-512S | 1 1/2 | DD | Aut | Car | ..... | Ce | FB | No | ..... | ..... | ..... | TF | 17 | 17 | ..... | ..... | 1 1/2 | 12 1/2 | 1 1/2 | 3 1/2 | 49 1/2 | 49 1/2 | 42 | ..... | Own | 22 |
| 23 | Packard.....Eight, 2103, 2106 | 20 | CP | AC | Car | WDO-531S | 1 1/2 | DD | Aut | Car | ..... | Ce | FB | No | ..... | ..... | ..... | TF | 23 | 23 | ..... | ..... | 1 1/2 | 11 1/2 | 1 1/2 | 3 1/2 | 52 1/2 | 52 1/2 | 42 | ..... | Own | 23 |
| 24 | Plymouth.....Six, P-15 | 17 | CP | ..... | ..... | ..... | 1 1/2 | SD | Aut | No | ..... | Ce | FB | No | ..... | No | Yes | Cel | 15 | 15 | Yes | Yes | 1 1/2 | 6 1/2 | 1 1/2 | 8 1/2 | 49 1/2 | 49 1/2 | 40 | ..... | ..... | 24 |
| 25 | Pontiac.....Six, 1946-25 | 17 | CP | AC | Car | WAI-537-5 | 1 1/2 | SD | Aut | Car | Var | Ce | FB | No | Har | Yes | Yes | Cel | 18 | 18 | Yes | Yes | 1 1/2 | ..... | 1 1/2 | ..... | ..... | ..... | ..... | Var | Own | 25 |
| 26 | Pontiac.....Six, 1946-26 | 17 | CP | AC | Car | WAI-537-5 | 1 1/2 | SD | Aut | Car | Var | Ce | FB | No | Har | Yes | Yes | Cel | 18 | 18 | Yes | Yes | 1 1/2 | ..... | 1 1/2 | ..... | ..... | ..... | ..... | Var | Own | 26 |
| 27 | Pontiac.....Eight, 1946-27 | 17 | CP | AC | Car | WDO-548S | 1 1/2 | DD | Aut | Car | AC | Ce | FB | No | Har | Yes | Yes | Cel | 19 1/2 | 19 1/2 | Yes | Yes | 1 1/2 | ..... | 1 1/2 | ..... | ..... | ..... | ..... | Var | Own | 27 |
| 28 | Pontiac.....Eight, 1946-28 | 17 | CP | AC | Car | WDO-548S | 1 1/2 | DD | Aut | Car | AC | Ce | FB | No | Har | Yes | Yes | Cel | 19 1/2 | 19 1/2 | Yes | Yes | 1 1/2 | ..... | 1 1/2 | ..... | ..... | ..... | ..... | Var | Own | 28 |
| 29 | Studebaker.....Six, 50 | 15 | CP | AC | Car | WE-532S | 1 1/2 | SD | Aut | Car | Wa | Ce | FB | No | BB | No | No | Cel | 10 1/2 | 10 1/2 | Yes | No | 1 1/2 | ET | 1 1/2 | 8 1/2 | 38 1/2 | 38 1/2 | 45 | Var | H-S | 29 |

ABBREVIATIONS

- * Or equivalent
 A—Automotive
 BB—Bishop & Babcock
 Car—Carter Carburetor Co.
 C—Centrifugal Pump
 CP—Cylinder Pump
 D—Dayton Rubber Co.
 DD—Dual Downdraft
 E—Ebor Type
 FB—Fan Belt
 Fed—Feeder Mfg. Co.
 F—Flexible Coupling
 Fu—Fuel Pump
 Ga—Gates Rubber Co.
 GB—Generator Drive Belt
 Go-G—Goodrich or Gates Rubber Co.
 Har—Holley Carburetor Co.
 H—Holley Carburetor Co.
 McC—McCord
 McC—McCord Radiator Co.
 No—No or None
 NS—Nobilit Sparks
 Old—Oldberg Mfg. Co.
 Oml—Own, McCord, or Long
 Own—Own, Modine, or McCord
 S—Stromberg or Carrier
 Sch—Schwabe-Dummins Co.
 SD—Single Downdraft
 S—Sison

- Sir—Stromberg Carburetor Co.
 TF—Tube and Fin
 T—Tulison Mfg. Co.
 TV—Tubular Vee Cell
 UC—United Air Cleaner Div.
 VC—Vee Cell
 Wal—Weir Mfg. Co.
 Yng—Young Radiator Co.

- GB—Generator Drive Belt
 Go-G—Goodrich or Gates Rubber Co.
 Har—Holley Carburetor Co.
 H—Holley Carburetor Co.
 McC—McCord
 McC—McCord Radiator Co.
 No—No or None
 NS—Nobilit Sparks
 Old—Oldberg Mfg. Co.
 Oml—Own, McCord, or Long
 Own—Own, Modine, or McCord
 S—Stromberg or Carrier
 Sch—Schwabe-Dummins Co.
 SD—Single Downdraft
 S—Sison

- AC—AC Spark Plug Div.
 Aut—Automatic
 BB—Bishop & Babcock Mfg. Co.
 Car—Carter Carburetor Co.
 C—Centrifugal Pump
 CP—Cylinder Pump
 D—Dayton Rubber Co.
 DD—Dual Downdraft
 E—Ebor Type
 FB—Fan Belt
 Fed—Feeder Mfg. Co.
 F—Flexible Coupling
 Fu—Fuel Pump
 Ga—Gates Rubber Co.
 GB—Generator Drive Belt
 Go-G—Goodrich or Gates Rubber Co.
 Har—Holley Carburetor Co.
 H—Holley Carburetor Co.
 McC—McCord
 McC—McCord Radiator Co.
 No—No or None
 NS—Nobilit Sparks
 Old—Oldberg Mfg. Co.
 Oml—Own, McCord, or Long
 Own—Own, Modine, or McCord
 S—Stromberg or Carrier
 Sch—Schwabe-Dummins Co.
 SD—Single Downdraft
 S—Sison

APRIL, 1946

1946 PASSENGER CARS

STARTING MOTORS, LAMPS AND HORNS

| Line Numbers | PASSENGER CAR MAKE AND MODEL | STARTING MOTOR | | | | | | | | | | LAMPS | | | | | | HORN | | | | | | | | |
|--------------|------------------------------------|----------------|----------|----------------------|----------------------------|---------------|-------|------------------|---------------|-------|---------------|-----------------|--------------------|---------------|----------|--------------|---------------------|----------------------|----------------------|----------------|------------------------------|--------------------------|------|-------------|------|----------------------|
| | | Make | Model | Cranking Speed (RPM) | Brush Spring Tension (Oz.) | Lock Test | | | No Load Test | | Type of Drive | Starting Device | Starting Operation | Pinion Meshes | Flywheel | | | Make-Lighting Switch | Tail and Dash Lights | Head Lamp—Make | Parking or Fender Light—Make | Tail and Stop Light—Make | Type | Number Used | Make | Average Draw of Each |
| | | | | | | Amperage Draw | Volts | Torque (Lb. Ft.) | Amperage Draw | Volts | | | | | R.P.M. | No. of Teeth | Face Width of Teeth |  |  |  |  |  |  |  |  |  | Ratio to Starter Armature (to-1) |
| 1 | Buick.....Eight, 50 | DR | 1107049 | 90 | 26-28 | 575 | 3.40 | 12.0 | 65 | 5.0 | 5000 | Spo | Sol | Dap | F | 146 | 16.22 | 18.20 | DR | No | Guide | Guide | Vib | 2 | DR | 18.20 |
| 2 | Buick.....Eight, 70 | DR | 1107028 | 90 | 26-28 | 600 | 3.00 | 16.0 | 65 | 5.0 | 5500 | Spo | Sol | Dap | F | 156 | 17.33 | 18.20 | DR | No | Guide | Guide | Vib | 2 | DR | 18.20 |
| 3 | Cadillac.....Eight, 61, 62, 65, 75 | DR | 1107931 | 125 | 24-28 | 600 | 3.00 | 16.0 | 65 | 5.5 | 5500 | Spo | Sol | Pbd | F | 156 | 17.00 | 9 | DR | No | Guide | Guide | Vib | 2 | DR | 9 |
| 4 | Chevrolet.....Six | DR | 1107061 | 125 | 24-28 | 525 | 3.40 | 12.0 | 65 | 5.0 | 5000 | Man | Man | Dap | F | 139 | 15.44 | 18-20 | DR | No | Guide | Guide | Vib | 2 | DR | 18-20 |
| 5 | Chrysler.....Six, C-38 | DR | | | | 590 | 3.40 | 15.0 | 58 | 6.0 | 3500 | Spo | Sol | Pbd | F | 146 | 16.22 | 19-20 | | No | | | Vib | 2 | | 19-20 |
| 6 | Chrysler.....Eight, C-39 | DR | | | | 590 | 3.40 | 15.0 | 58 | 6.0 | 3500 | Spo | Sol | Pbd | F | 146 | 16.22 | 19-20 | | No | | | Vib | 2 | | 19-20 |
| 7 | Cordley.....Four, CC-46 | AL | MAK | 250 | | 520 | 4.00 | 7.0 | 65 | 5.5 | 5000 | Sol | Sol | Pbd | R | 88 | 8.80 | 7 | Dgs | No | C-B | | Vib | 1 | S-W | 7 |
| 8 | De Soto.....Six, S-11 | | | | | 525 | 3.40 | 13.0 | 58 | 6.0 | 3500 | Spo | Sol | Pbd | F | 146 | 16.22 | 19-20 | | No | | | Vib | 2 | | 19-20 |
| 9 | Dodge.....Six, D-24 | | | | | 525 | 3.40 | 13.0 | 58 | 6.0 | 3500 | † | Sol | Pbd | F | 146 | 16.22 | 19-20 | | No | | | Vib | 2 | | 19-20 |
| 10 | Ford.....Eight, 88A | Own | 18 | 100 | 27 | 550 | 3.75 | 15.0 | 75 | 6.0 | 8000 | Ben | Sol | Pbd | R | 112 | 11.20 | 15 | Rbm | No | Own | Own | Vib | 2 | S-W | 15 |
| 11 | Frazier.....Six | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | Hudson.....Six-51, 52 | AL | MZ-4092 | 150 | 53 | 540 | 4 | 12.3 | 60 | 5.5 | 4000 | Ben | Sol | Pbd | R | 134 | 14.9 | 15 | Dgs | No | Hall | | Vib | 2 | S-W | 15 |
| 13 | Hudson.....Eight-53, 54 | AL | MAB-4100 | 150 | 53 | 780 | 4 | 22.5 | 60 | 5.5 | 3700 | Ben | Sol | Pbd | R | 134 | 14.9 | 15 | Dgs | No | Hall | | Vib | 2 | S-W | 15 |
| 14 | Kaiser.....Six | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | Lincoln.....Twelve, 66H | Own | 18 | 100 | 27 | 550 | 3.75 | 15.0 | 75 | 6.0 | 8000 | Ben | Sol | Pbd | R | 112 | 11.20 | 15 | Rbm | No | Own | Own | Vib | 2 | S-W | 15 |
| 16 | Mercury.....Eight, 68M | Own | 18 | 100 | 27 | 550 | 3.75 | 15.0 | 75 | 6.0 | 8000 | Ben | Sol | Pbd | R | 112 | 11.20 | 15 | Rbm | No | Own | Own | Vib | 2 | S-W | 15 |
| 17 | Nash.....Six, 4640 | AL | MZ-4103 | | | 775 | 4.00 | 22.5 | 60 | | | Ben | Man | Dap | R | 122 | 16 | | | | | | | | | |
| 18 | Nash.....Six, 4650 | AL | MAB-4076 | | | | | | | | | Ben | Man | Dap | R | 122 | 16 | | | | | | | | | |
| 19 | Oldsmobile.....Eight | DR | 1107034 | 100 | 24-28 | 475 | 3.00 | 12.0 | 65 | 5.0 | 5000 | Spo | Man | Dap | F | 145 | 16.11 | 14-16 | Dgs | No | Hall | C-B | Vib | 2 | AL | 14-16 |
| 20 | Oldsmobile.....Eight | DR | 1107922 | 100 | 24-28 | 600 | 3.00 | 15.0 | 60 | 5.0 | 6000 | Spo | Man | Dap | F | 145 | 16.11 | 14-16 | Dgs | No | Hall | C-B | Vib | 2 | AL | 14-16 |
| 21 | Packard.....Six, 2100 | (a) | (a) | | | 670 | 4.00 | 18.0 | | | Ben | Ben | | | | 140 | 15.55 | 18-21 | DR | No | Guide | Guide | Vib | 2 | DR | 18, 21 |
| 22 | Packard.....Eight, 2101, 2111 | AL | MAW-4027 | | | 670 | 4.00 | 18.0 | | | Ben | Ben | | | | 140 | 15.55 | 18-21 | DR | No | Guide | Guide | Vib | 2 | DR | 18, 21 |
| 23 | Packard.....Eight, 2103, 2106 | AL | MAX-4062 | | | 906 | 4.00 | 45.9 | | | Ben | Sol | | | | 140 | 15.55 | 22-25 | | No | | | | | S-W | 22-25 |
| 24 | Plymouth.....Six, P-15 | | | | | 450 | 3.80 | 10.0 | 55 | 6.0 | 3500 | † | Sol | Pbd | F | 146 | 16.22 | 33-28 | | No | | | AE | 2 | | 18-20 |
| 25 | Pontiac.....Six, 1946-25 | DR | 1107032 | 43 | 24-28 | 525 | 3.37 | 12.0 | 65 | 5.0 | 5000 | Ben | Man | Dap | R | | 15.55 | 18-21 | DR | No | Guide | Guide | Vib | 2 | DR | 18, 21 |
| 26 | Pontiac.....Six, 1946-26 | DR | 1107032 | 43 | 24-28 | 525 | 3.37 | 12.0 | 65 | 5.0 | 5000 | Ben | Man | Dap | R | | 15.55 | 18-21 | DR | No | Guide | Guide | Vib | 2 | DR | 18, 21 |
| 27 | Pontiac.....Eight, 1946-27 | DR | 1107921 | 43 | 24-28 | 600 | 3.00 | 15.0 | 60 | 5.0 | 6000 | Ben | Man | Dap | R | | 15.55 | 18-21 | DR | No | Guide | Guide | Vib | 2 | DR | 18, 21 |
| 28 | Pontiac.....Eight, 1946-28 | DR | 1107921 | 43 | 24-28 | 600 | 3.00 | 15.0 | 60 | 5.0 | 6000 | Ben | Man | Dap | R | | 15.55 | 18-21 | DR | No | Guide | Guide | Vib | 2 | DR | 18, 21 |
| 29 | Studebaker.....Six, 5G | AL | MZ-4090 | 130 | 42-53 | 560 | 4.00 | 11.8 | 70 | 5.5 | 4300 | Ben | Man | Dap | R | 124 | 13.77 | 6 | Dgs | No | C-B | C-B | Vib | 1 | DR | 6 |

ABBREVIATIONS

†—Bendix Type
(a)—Auto-Lite
AL—The Electric Auto-Lite Co.
Ben—Bendix-Eclipse Machine Div

C-B—Corcoran-Brown Lamp Div.
Dap—Depress Accelerator Pedal
Dgs—Depress Clutch Pedal
Dgs—H. A. Douglas Mfg. Co.
DR—Delco-Remy Div.
Dap—Depress Starter Pedal

F—Front
Guide—Guide Lamp Div.
Hc—C. M. Hall Lamp Co.
Man—Manual
No—No or None
Pbd—Push Button on Dash

R—Rear
Rbm—R.B.M. Mfg. Co.
Sgo—Sliding Gear With Overrunning Clutch
Sol—Solenoid
S-W—Sparks-Withington Co.
Vib—Vibrator

1946 PASSENGER CARS

GENERATORS AND CLUTCHES

| GENERATOR | | | | | | | | | | CLUTCH | | | | | | | | | | | | | | | | | | | | | | | |
|-------------|------------------------------------|------|-------------|------|-----------------------------|------------------|----------------------------------|-------|---------|--------------|------------------|-----------------------|-------|------------------|-----------------------|-------|------------------|----------------------|--------------|-------|------------|------------------|---------------------|-----------------------|----------|--------------------|---------------------|-------------|-----------------|--------------|-------|-----|----|
| Line Number | PASSENGER CAR MAKE AND MODEL | Make | Model | Type | Brush Springs Tension (Oz.) | Charging Control | Maximum Controlled Charging Rate | | | Cutout Relay | | Voltage Regulator | | | Current Regulator | | | Charging Rate—M.P.H. | Ammeter—Make | Make | Drive Type | Semi-centrifugal | Vibration Insulator | Fachings | | | | Line Number | | | | | |
| | | | | | | | Temperature (°F) | Amps | Voltage | Volts | Temperature (°F) | Average Air Gap (In.) | Volts | Temperature (°F) | Average Air Gap (In.) | Amps | Temperature (°F) | | | | | | | Average Air Gap (In.) | Material | Inside Diam. (In.) | Outside Diam. (In.) | | Thickness (In.) | No. Required | | | |
| 1 | Buick.....Eight, 50 | DR | 1102679 | Shu | 26 | CV | H-C | 33 | 8.0 | 2400 | 6.2-6.7 | 0-4 | .020 | 7.2-7.4 | 150 | .072 | 32-34 | 150 | .062 | 25 | AC | Own* | DF | No | No | Spr | 6 | .125 | .203 | .125 | 2 | 1 | |
| 2 | Buick.....Eight, 70 | DR | 1102686 | Shu | 26 | CV | H-C | 33 | 8.0 | 2400 | 6.2-6.7 | 0-4 | .020 | 7.2-7.4 | 150 | .072 | 32-34 | 150 | .062 | 25 | AC | Own* | DF | No | No | Spr | 6 1/2 | .105 1/2 | .203 | .125 | 2 | 2 | |
| 3 | Cadillac.....Eight, 61, 62, 60, 75 | DR | 1102683 | Shu | 24-28 | CV | H-C | 35 | 8.0 | 2300 | 6.4-6.9 | ..... | .020 | 7.2-7.6 | 72 | .070 | 38-40 | 72 | .082 | 22 | AC | Long* | DF† | Yes | Yes | Spr | 7 | (a) | .137 | .135 | 2 | 3 | |
| 4 | Chevrolet.....Six | DR | 1102687 | Shu | 25 | CV | H-C | 35 | 7.3 | 2400 | 6.2-6.7 | 0-4 | .020 | 7.2-7.4 | 150 | .070 | 34-36 | 150 | .080 | 25 | AC | (b) | DF | No | No | Spr | 6 1/2 | .135 | .135 | .135 | 2 | 4 | |
| 5 | Chrysler.....Six, C-38 | DR | 1102688 | Shu | 25 | CV | H-C | 35 | 8.0 | 2200 | 6.6-6.9 | 2-6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 25 | ..... | ..... | DF** | ..... | ..... | Spr | 7 | 10 | .125 | .125 | 2 | 5 | |
| 6 | Chrysler.....Eight, C-39 | DR | 1102689 | Shu | 25 | CV | H-C | 35 | 8.0 | 2200 | 6.6-6.9 | 2-6 | ..... | ..... | ..... | ..... | ..... | ..... | 26 | ..... | ..... | ..... | DF | ..... | FC | ..... | Spr | 10 | .125 | .125 | .125 | 2 | 6 |
| 7 | Crosley.....Four, CC-46 | AL | 1102690 | Tb | Max 53 | V | H-C | 9.5 | 8.0 | 2500 | 6.4-7.0 | .5-3 | ..... | 7.2-7.4 | 70 | .070 | No | No | No | 28 | SW | Rock | DF | No | No | No | 4 | 8 | .125 | .125 | .125 | 2 | 7 |
| 8 | De Soto.....Six, S-11 | DR | 1102691 | Shu | 25 | CV | H-C | 35 | 8.0 | 2200 | 6.6-6.9 | 2-8 | ..... | ..... | ..... | ..... | ..... | ..... | 25 | ..... | ..... | ..... | DF** | ..... | Spr | 7 | 10 | .125 | .125 | .125 | 2 | 8 | |
| 9 | Dodge.....Six, D-24 | DR | 1102692 | Shu | 25 | CV | H-C | 35 | 8.0 | 2200 | 6.6-6.9 | 2-8 | ..... | ..... | ..... | ..... | ..... | ..... | 25 | ..... | ..... | ..... | DF† | ..... | Spr | 7 | 10 | .125 | .125 | .125 | 2 | 9 | |
| 10 | Ford.....Eight, 69A | Own | 21A | Shu | 20-22 | CV | H-C | 30 | 7.2 | 2200 | 6.5 | 5 | ..... | 7.2 | 70 | .048 | 30 | 70 | .048 | 21 | Own | Long | DF | Yes | Yes | Spr | 6 1/2 | 10 | .125 | .125 | .125 | 2 | 10 |
| 11 | Frazier.....Six F-47 | AL | GDZ-EO-6804 | Shu | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | B&B | DF | ..... | Spr | ..... | 9 1/2 | .203 | .203 | .203 | 11 | 11 | |
| 12 | Hudson.....Six, S-1, 52 | AL | GEC-4801-A | Tb | Max 53 | V | C° | 43° | 8° | 3200* | 6.5-7.2 | 2 | ..... | ..... | ..... | ..... | No | No | No | 35 | IL | Own | DF | No | No | Spr | 5 1/2 | 8 1/2 | .203 | .203 | .203 | 90 | 12 |
| 13 | Hudson.....Eight, 53, 54 | AL | GEC-4801-A | Tb | Max 53 | V | C° | 43° | 8° | 3200* | 6.5-7.2 | 2 | ..... | ..... | ..... | ..... | No | No | No | 35 | IL | Own | DF | No | No | Spr | 6 1/2 | 9 1/2 | .203 | .203 | .203 | 108 | 13 |
| 14 | Kaiser.....Six K-65 | AL | GDZ-4813-B | Shu | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Aub | DF | ..... | Spr | ..... | 8 1/2 | ..... | ..... | ..... | ..... | 14 | |
| 15 | Lincoln.....Twelve, 66H | Own | 21A | Shu | 20-22 | CV | H-C | 30 | 7.2 | 2200 | 6.5 | 5 | ..... | 7.2 | 70 | .048 | 30 | 70 | .048 | 21 | K-S | Long | DF | Yes | Yes | Spr | 6 1/2 | 10 | .125 | .125 | .125 | 2 | 15 |
| 16 | Mercury.....Eight, 68M | Own | 21A | Shu | 20-22 | CV | H-C | 30 | 7.2 | 2200 | 6.5 | 5 | ..... | 7.2 | 70 | .048 | 30 | 70 | .048 | 22 | Own | Long | DF | Yes | Yes | Spr | 6 1/2 | 10 | .175 | .175 | .175 | 2 | 16 |
| 17 | Nash.....Six, 4640 | AL | GDZ-4806A | Shu | Max 53 | CV | H-C | 35 | 8.0 | 2000 | 6.4-6.7 | 4-6 | .032 | 7.2-7.4 | 70 | .080 | 32-35 | H-C | .060 | ..... | KS | B&B | DF† | ..... | Spr | 5 1/2 | 7 1/2 | .133 | .133 | .133 | 2 | 17 | |
| 18 | Nash.....Six, 4650 | AL | GDZ-4806A | Shu | Max 53 | CV | H-C | 35 | 7.4 | 2000 | 6.4-6.7 | 4-6 | .032 | 7.2-7.4 | 70 | .080 | 32-35 | H-C | .060 | ..... | KS | B&B | DF† | ..... | Spr | 5 1/2 | 7 1/2 | .133 | .133 | .133 | 2 | 18 | |
| 19 | Oldsmobile.....Six | DR | 1102694 | Shu | 24-28 | CV | H-C | 33 | 7.8 | 2400 | 6.5 | 2 | .020 | 7.3 | 150 | .070 | 33 | 150 | .080 | 21 | AC | B&B* | DF† | No | No | Spr | 6 | 9 1/2 | .125 | .125 | .125 | 2 | 19 |
| 20 | Oldsmobile.....Eight | DR | 1102695 | Shu | 24-28 | CV | H-C | 33 | 7.8 | 2400 | 6.5 | 2 | .020 | 7.3 | 150 | .070 | 33 | 150 | .080 | 21 | AC | B&B* | DF† | No | No | Spr | 7 | 10 | .125 | .125 | .125 | 2 | 20 |
| 21 | Packard.....Six, 2100 | AL | GDZ-4801F | Shu | Max 53 | CV | H-C | 35 | 8.0 | 2200 | 6.5-7.0 | 4-6 | .032 | 7.2-7.5 | 70 | .080 | 34-36 | H-C | .060 | ..... | ..... | ..... | DF | Yes | Yes | Spr | 6 | 9 1/2 | .125 | .125 | .125 | 2 | 21 |
| 22 | Packard.....Eight, 2101, 2111 | AL | GDZ-4801F | Shu | Max 53 | CV | H-C | 35 | 8.0 | 2200 | 6.5-7.0 | 4-6 | .032 | 7.2-7.5 | 70 | .080 | 34-36 | H-C | .060 | ..... | ..... | ..... | DF | Yes | Yes | Spr | 6 | 10 | .125 | .125 | .125 | 2 | 22 |
| 23 | Packard.....Eight, 2102, 2108 | AL | GEA-4802A | Shu | Max 53 | CV | H-C | 35 | 8.0 | 2200 | 6.5-7.0 | 4-6 | .032 | 7.2-7.5 | 70 | .080 | 34-36 | H-C | .060 | ..... | ..... | ..... | DF | Yes | Yes | Spr | 6 1/2 | 11 | .125 | .125 | .125 | 2 | 23 |
| 24 | Plymouth.....Six, P-15 | DR | 1102696 | Shu | 24-28 | CV | H-C | 35 | 8.0 | 2200 | 6.6-6.9 | 2-6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 25 | ..... | ..... | DF | ..... | Spr | 6 | 9 1/2 | .125 | .125 | .125 | 2 | 24 | |
| 25 | Pontiac.....Six, 1946-25 | DR | 1102697 | Shu | 22-26 | CV | H | 33 | 7.3 | 1140 | 6.2-6.7 | 0-4 | .020 | 7.2-7.4 | 70 | .072 | 32-34 | H | .082 | 25 | AC | Int | DF | No | No | Spr | 6 | 9 1/2 | .125 | .125 | .125 | 2 | 25 |
| 26 | Pontiac.....Six, 1946-26 | DR | 1102698 | Shu | 22-26 | CV | H | 33 | 7.3 | 1140 | 6.2-6.7 | 0-4 | .020 | 7.2-7.4 | 70 | .072 | 32-34 | H | .082 | 25 | AC | Int | DF | No | No | Spr | 6 | 9 1/2 | .125 | .125 | .125 | 2 | 26 |
| 27 | Pontiac.....Eight, 1946-27 | DR | 1102699 | Shu | 22-26 | CV | H | 33 | 7.3 | 1140 | 6.2-6.7 | 0-4 | .020 | 7.2-7.4 | 70 | .072 | 32-34 | H | .082 | 25 | AC | Int | DF | No | No | Spr | 6 | 9 1/2 | .125 | .125 | .125 | 2 | 27 |
| 28 | Pontiac.....Eight, 1946-28 | DR | 1102699 | Shu | 22-26 | CV | H | 33 | 7.3 | 1140 | 6.2-6.7 | 0-4 | .020 | 7.2-7.4 | 70 | .072 | 32-34 | H | .082 | 25 | AC | Int | DF | No | No | Spr | 6 | 9 1/2 | .125 | .125 | .125 | 2 | 28 |
| 29 | Sudobaker.....Six, 5G | AL | GDZ-4804A | Shu | Max 53 | CV | H | 35 | 7.3 | 1600 | 6.4-6.6 | ..... | .038 | 7.35 | 70 | .080 | 35 | 70 | .060 | 18 | SW | B&B | DF | No | No | Spr | 5 1/2 | 8 | .125 | .125 | .125 | 2 | 29 |

ABBREVIATIONS

*—Long or Borg & Beck Disk
 **—Through fluid flywheel with semi-automatic transmission
 †—Through fluid flywheel with automatic transmissions at extra cost
 ‡—Fluid coupling at extra cost

•—With Hydra-Matic Drive there is no clutch
 o—Hot—37 amps, 8 volts, at 3000 rpm.
 †—Or Delco-Remy 1102682
 (a)—Models 61, 62, 60—10½ in.
 Model 70—11 in.
 (b)—Driven Disk—Own and Inland
 Remainder—Own and B & B

AC—AC Spark Plug Co.
 AL—The Electric Auto-Lite Co.
 Aub—Auburn Mfg. Co.
 B&B—Borg & Beck Div
 Co—Cork
 CV—Current and voltage regulator
 DR—Direct to flywheel face
 GDZ—Delco-Remy Div.

FC—Fluid coupling
 FD—Fluid drive
 H-C—Hot or cold
 IL—Indicating light
 Int—Inland Mfg. Co.
 KS—King-Seely Corp.
 Long—Long Mfg. Div.
 Max—Maximum

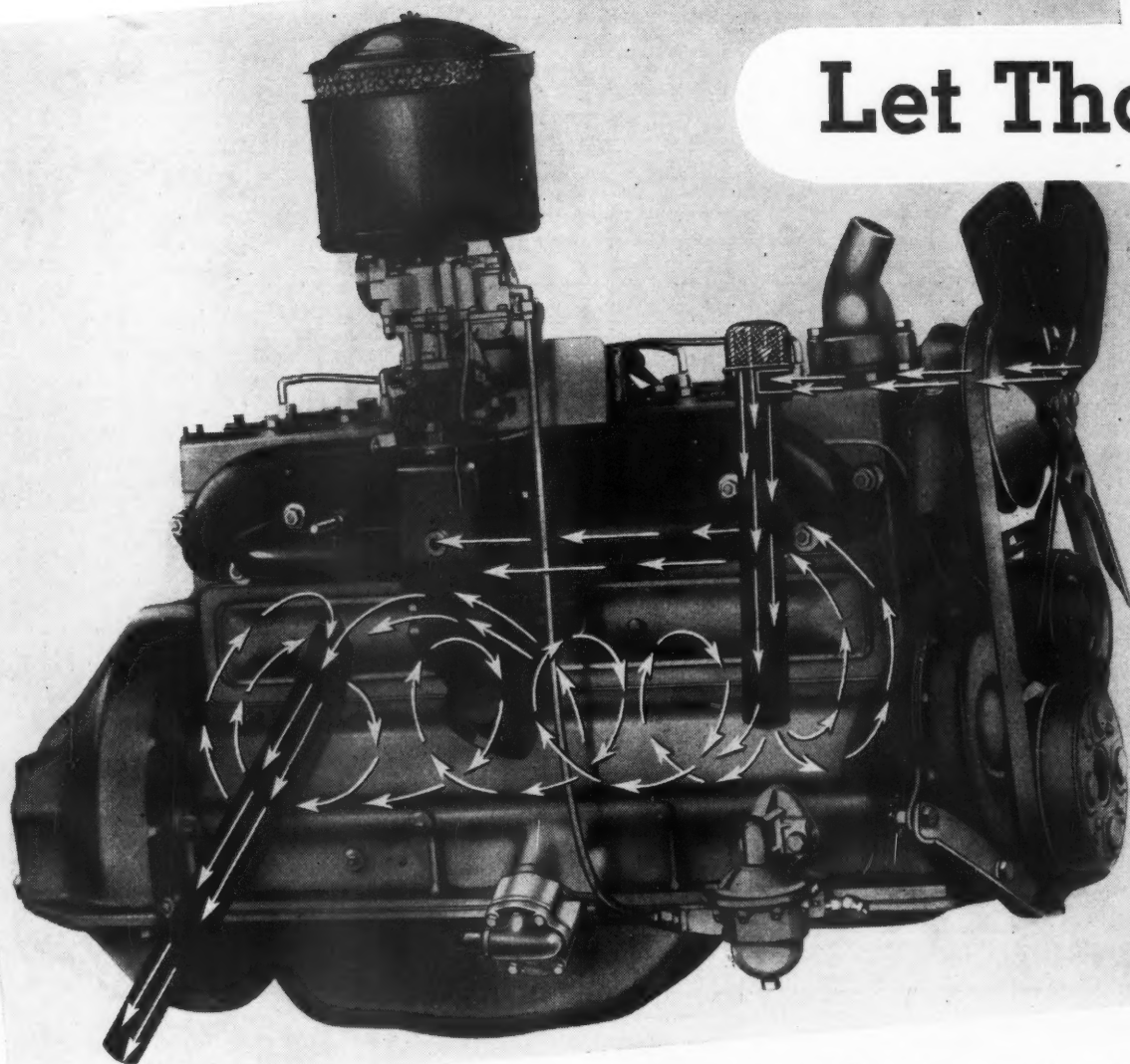
Mo—Molded asbestos
 MW—Molded on one face, woven on other face
 No—No or none
 Ovr—Operating temperature
 Rock—Rockford Drilling Machine Div.
 Shu—Shunt
 Spr—Springs

SW—Stewart-Warner Corp.
 Tb—Third Brush Type
 V—Voltage regulator
 Wo—Woven asbestos

STEERING AND BRAKES

| | | | | |
|---|---|---|--|--|
| <p>EVATIONS</p> <p>(f) Adjust to slight drag, back off four notches</p> <p>(g) Front 23 in., rear 20½ in.</p> <p>(h) Front 25½ in., rear 22½ in.</p> <p>(i) Front 27 in., rear 24 in.</p> <p>(j) Front 28½ in., rear 25 in.</p> <p>(k) Front 30 in., rear 26 in.</p> <p>(l) Front 31½ in., rear 27 in.</p> <p>(m) Front 33 in., rear 28½ in.</p> <p>(n) Front 34½ in., rear 29½ in.</p> <p>(o) Front 36 in., rear 31 in.</p> <p>(p) Front 37½ in., rear 32½ in.</p> <p>(q) Front 39 in., rear 34 in.</p> <p>(r) Front 40½ in., rear 35½ in.</p> <p>(s) Front 42 in., rear 37 in.</p> <p>(t) Front 43½ in., rear 38½ in.</p> <p>(u) Front 45 in., rear 40 in.</p> <p>(v) Front 46½ in., rear 41½ in.</p> <p>(w) Front 48 in., rear 43 in.</p> <p>(x) Front 49½ in., rear 44½ in.</p> <p>(y) Front 51 in., rear 46 in.</p> <p>(z) Front 52½ in., rear 47½ in.</p> <p>(aa) Front 54 in., rear 49 in.</p> <p>(ab) Front 55½ in., rear 50½ in.</p> <p>(ac) Front 57 in., rear 52 in.</p> <p>(ad) Front 58½ in., rear 53½ in.</p> <p>(ae) Front 60 in., rear 55 in.</p> <p>(af) Front 61½ in., rear 56½ in.</p> <p>(ag) Front 63 in., rear 58 in.</p> <p>(ah) Front 64½ in., rear 59½ in.</p> <p>(ai) Front 66 in., rear 61 in.</p> <p>(aj) Front 67½ in., rear 62½ in.</p> <p>(ak) Front 69 in., rear 64 in.</p> <p>(al) Front 70½ in., rear 65½ in.</p> <p>(am) Front 72 in., rear 67 in.</p> <p>(an) Front 73½ in., rear 68½ in.</p> <p>(ao) Front 75 in., rear 70 in.</p> <p>(ap) Front 76½ in., rear 71½ in.</p> <p>(aq) in iron rim with steel web</p> | <p>Model 61, 62, 60—23.5, Model 75—24.6</p> <p>Model 61—19.6 ft; 62—20.1 ft; 60—20.6 ft,</p> <p>Model 75—21.1 ft; 76—21.6 ft</p> <p>Model 61, 62, 60—Front 2 in., Rear 2½ in.</p> <p>Model 75—2½ in., Rear 2 in.</p> <p>Model 61, 62, 60—208 sq in. Model 75—233 sq in.</p> | <p>BW—Ball bearing, worm and nut</p> <p>CB—Cable and conduit</p> <p>Cent—Centrifuge</p> <p>Ch—Cast Iron</p> <p>Ch—Chain and Lever</p> <p>Cr—Crystalline</p> <p>Lockheed</p> <p>Gen—Cast iron</p> <p>GS—Cast iron braking surface in steel drum</p> <p>D—Dup Automatic</p> <p>D—Dup Automatic</p> <p>Ext—External contracting</p> <p>Gen—General Mfg. Co.</p> <p>AS—Alloy Steel</p> <p>B—Bendix or Delco</p> <p>B—D—Bendix or Delco</p> <p>Res—Residex Products Div.</p> <p>sq in.</p> | <p>Haw—Hawley</p> <p>Int—Internal expanding</p> <p>Int—Internal expanding</p> <p>Lat—Latent</p> <p>M—Mechanical</p> <p>M—Model</p> <p>N—Negative</p> <p>No—No or none</p> <p>GS—Cast iron</p> <p>WG—Wagner Electric Corp.</p> <p>WG—Wagner and gear sector</p> <p>W—Woven</p> <p>WR—Warm and Roller</p> <p>RB—Recirculating ball</p> | <p>Ross—Ross Gear & Tool Co.</p> <p>Re—Rear service brakes</p> <p>S—Servo</p> <p>Sig—Signal</p> <p>Stg—Storage</p> <p>Stg—Storage</p> <p>Var—Variable</p> <p>W—Wagner</p> <p>WG—Wagner Electric Corp.</p> <p>WG—Wagner and gear sector</p> <p>W—Woven</p> <p>WR—Warm and Roller</p> <p>V—Yes</p> |
|---|---|---|--|--|

Let That



Slip-stream type crankcase ventilating system used on Plymouth, Chevrolet, Dodge and Oldsmobile, and other car models.

A stopped-up ventilation system builds up enough pressure to send oil streaming out

If the crankcase ventilating system had pretty legs and a smile, people would take a look at it more often.

As it is most any shop-owner will pull his head up out of the welter of work orders for a moment to opine, that of the jobs parading through his establishment, a goodly percentage can be tracked down to a ventilating system with a cold in its nose. Namely, the ventilating-system air-intake or outlet clogged up—either or both.

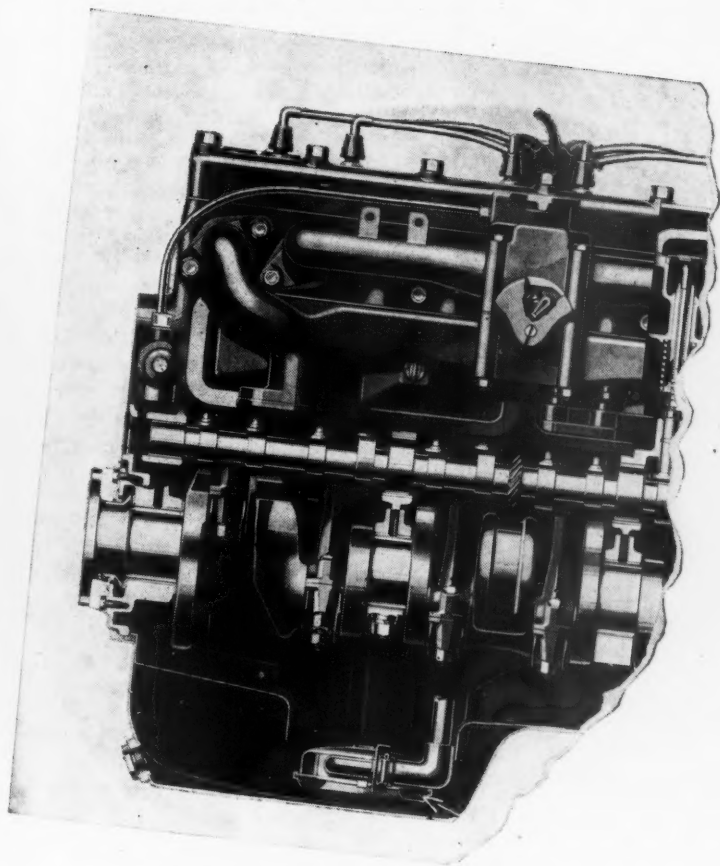
The crankcase ventilating system is "air-conditioning," that's all. Down where the crankshaft spins and the rods frolic, the air is heavy with vapors. Most of the vapor is an oil mist doing a job of lubricating, but some of it is blowby and plenty of it is water. Air often has a lot of

moisture in it and will often condense in the crankcase. If this water is not whisked out of the crankcase by the ventilating system, it churns up with the oil and combustion by-products, and grows sludge.

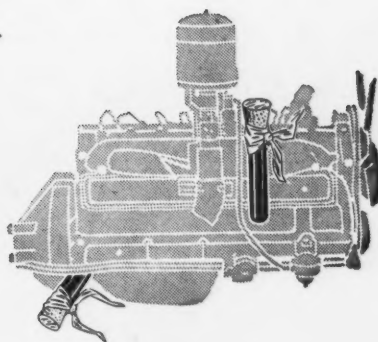
"A"-card wartime driving threw a double burden on the ventilating system, and left the richest harvest of sludge since the Mississippi busted loose back in '36.

Most often, it's sludge that corks up the ventilating system, but frequently it's simple neglect of the filters at the intake and outlet. But whatever the cause, when the doors are slammed shut on the engine, a simple fact of life prevails. To wit and whereas: pressure builds up in the crankcase. This pressure can become strong enough

Crankcase Breathe!



The vacuum assisted, or positive type of system found on late pre-war De Soto models.



By BERNARD L. MILLER

over the fuel pump and distributor and the engine

to start pushing the oil out. Then into the shop comes Mr. Motorist on the double, and the following cries are heard above the dinging and bumping:

"You just charged me \$\$\$ to have my valve side-cover gasket changed, and now there's oil leaking out around my fuel pump and distributor!"

Or, if it's a lady . . . "What the aitch is the matter with you %\$#&! in this — — — shop! I got oil running out all over my engine!"

In many cases, the most popular exits for oil being herded around by pressure in the crankcase are the seals at the front and rear main bearings, with about 90 per cent going out the rear seal, if that makes any difference.

Sometimes, however, you'll see it drooling out around the valve-cover gasket, timing-gear case or, as mentioned above, out around the fuel pump or distributor shaft.

Nipping the trouble in the bud is merely a matter of policing the ventilating system. As you know, there are two types of crankcase ventilating systems—the slip stream type used on the Plymouth, Chevy, Dodge and Olds, to name a few. The second type we'll call the vacuum assisted or positive type and you've seen it on late prewar DeSotos.

In the slip stream system, the air enters through the oil filler pipe after first wiping its feet on the filter in the cap, then chases down around through the engine. It is then sucked out through a breather outlet. We say "sucked" because the breather outlet is an angle-cut pipe sticking down into the slipstream. As the car speeds

along, there's a venturi action that draws the air out of the crankcase. On the Oldsmobile, a baffle is fixed on the oil filter pipe so that the blast from the fan forces air into the crankcase.

The slip stream may get corked up when the filter on the air intake loads up with dust and dirt. Or, in a sludged engine, you can depend on the base of the breather pipes to be plugged with nice, black marmalade. On a sludged-up Oldsmobile you can take off the rear valve-cover plate and find the little pocket formed by the baffle in there, jammed solid with oil-mud, blocking the flow of fresh air.

(Continued on page 88)



A prospective purchaser is looking over this four-cylinder Flying Standard Touring model which is on display in New York showroom. Equipped with a 30 hp engine, the car is said to be able to attain a speed of 80 miles per hour. Models are tagged to sell from \$1500 to \$1800 each, and are reported to be selling well.

British Standard on display in New York Immediate Delivery is Promised Buyers

Two chassis models of the new post-war British built Standard are now being offered to the public in New York.

Immediate delivery is promised and while prices have not been set, \$1600 to \$1800 is being accepted with adjustments to be made when OPA prices the vehicles. The smaller chassis is rated at 8 h.p., and the larger one at 12 h.p. The 8 h.p. chassis has a wheelbase of 83 inches and a tread of 45 inches. The overall length is 139 inches and the overall width is 56 inches. The height is 61 inches and the chassis weight is 1475 lbs.

The 12 h.p. chassis has a wheelbase of 100 inches, and the front tread is 49 inches while the rear tread is 54½ inches. The overall length is 165 inches and the width 63 inches. The height is 63 inches and the chassis weight is 2250 lbs.

The 8 h.p. chassis uses an ell head, 4-cylinder engine of 1009 c.c. or 61.5 cu. in. displacement. The bore is 56.7 mm. or 2.24 in. and the stroke is 100 mm. or 3.94 in. The engine develops

28 h.p. at 4000 r.p.m. The pistons are three ring, split skirt aluminum alloy tin plated. The crankshaft is counter-balanced and supported in three precision type bearings. Steel connecting rods are used, also fitted with precision type bearings. The cylinder block is chromium iron with an aluminum cylinder head. Compression ratio is 6.7 to 1. Lubrication is pressure type by gear pump fitted with a floating oil intake. Downdraft carburetion with an air silencer is employed. A cast-in hot spot is incorporated in the manifold. The electrical equipment is Lucas with battery ignition with a 6-volt, 51 ampere hour Lucas battery. Voltage control of the charging rate is used. Engine cooling is thermo-syphon and fan.

The clutch is a single plate dry
(Continued on page 90)

Indianapolis Speedway Entries Mounting

Rex Mays, the heavy footed Californian who has been a top favorite with 500-mile race fans ever since he made his first appearance at the Indianapolis Motor Speedway in 1935, has added his name to the official entry list of 15 for the post war renewal of the speed classic next May 30. The A.A.A. Champion will drive the same eight-cylinder Bowes "Seal Fast" Special in which he took second-place in the last race five years ago.

A dash of International flavor was added to the 500-mile race at the Indianapolis Motor Speedway with the arrival of four more entries.

The additions to the official entry list include an Alfa-Romeo and a Maserati, both owned by Milt Marion of Hempstead, N. Y., assuring speed fans of at least four foreign-built racers, and correspondence with several European pilots indicates that this number will be doubled before the May 1 deadline for entries.

All four of the foreign cars are powered with eight-cylinder, super-charged motors and Horn's racer—owned by Mike Boyle of Chicago—is the same car in which Wilbur Shaw scored two of his three Speedway victories.

The other entries received recently are six-cylinder "jobs" which have been at the Indianapolis track in former years. One is owned by Charles E. Van Acker of South Bend, Ind., and the other by Robert F. Flavell and Terrance Duffy of Los Angeles, Cal. As in the case of Marion's two-car team, the names of the drivers were not listed.

Only four cars are at the track at the present time—the two Noc-Out Hose Clamp Specials which Lou Moore is preparing for the race and Boyle's cars which again are in "Cotton" Henning's capable hands.

The Speedway's \$300,000 rebuilding program meanwhile is progressing on schedule. The entire plant has been renovated, concrete for the new paddock stand across from the press pagoda was poured this week and excavation work for the new grand stand G is nearing completion.

EXTRA

Production of Frazer cars is scheduled to start late in April, according to Joseph W. Frazer, president of the Kaiser-Frazer Corp. The Kaiser will go into production on or about mid-summer, present plans indicate.

APRIL, 1946

a b c d

Benson Ford Rejoins Ford Motor Co.

Benson Ford has rejoined the Ford Motor Company after more than three years' service in the United States Army.

Henry Ford II, president of the company and brother of Benson Ford, made the announcement, adding that Benson Ford soon will take over an executive assignment. Benson Ford is a director of the company. Prior to joining the Army, he worked in the purchasing department and the supercharger division of the company.

Federal-Mogul Announces New Plant Construction

A new address and construction of a new and larger plant, housing the administrative offices and all distribution activities of the division, is announced by Don Herr, general manager of Federal-Mogul Service.

A ten-acre site has been acquired at Coldwater, Michigan, and construction will start soon on a model plant that is conveniently located in relation to all of the company's mid-western factories.

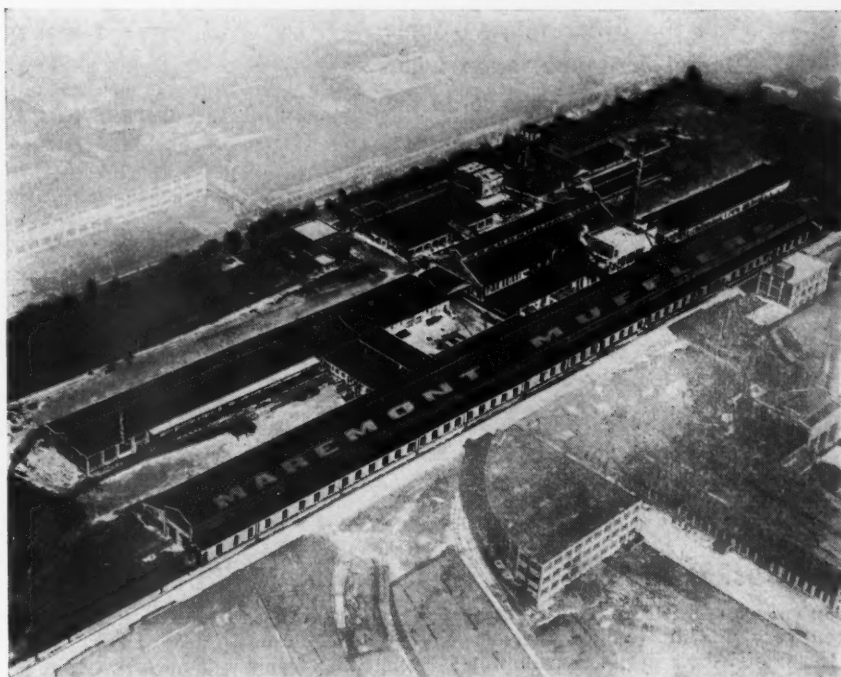
The new site is also well located for distribution to the company's 56 branches and to their entire, nationwide jobbing organization. It is expected that the new plant will be completed and occupied this summer. It will house the administrative offices, the master stock, cataloging services and all operations related to sorting and shipping stock.

Temporary quarters are already occupied by key personnel moved from the Detroit offices, and all business activity of Federal-Mogul Service head office is now being conducted at the new address, Coldwater, Michigan.

ASI Show Scheduled

J. M. Spangler was elected chairman at the organization meeting of the Joint Operating Committee of the Automotive Service Industries Show held at Atlantic City, N. J., March 20 and 21.

"The 1946 ASI Show will be held at Atlantic City, N. J., December 9 to 14 inclusive," Chairman Spangler said. Space contracts will be mailed to eligible manufacturers within a few weeks. The convention bureau of Atlantic City has assured the Committee of ample hotel accommodations.



Aerial view of the new Maremont muffler plant at Harvey, Ill. An increase in the production of leaf springs, muffler and exhaust systems of the Maremont firm has necessitated the purchase of the plant and its facilities.

Many Retail and Service Establishments To Come Under Wage-Hour Law Coverage

Large numbers of retail and service establishments will come under the coverage of the wage-hour law and all its provisions if current Congressional actions are taken at face value. A bill combining expanded coverage and a higher wage minimum is expected to pass Congress within the next year.

In addition, Supreme Court decisions have been steadily broadening the coverage of the wage-hour law. Already certain classes of retailers, hitherto regarded as exempt, have been placed under the provisions of the law and employers have found themselves confronted with suits for retroactive payments liquidating damages, and attorney fees.

S. 1349 is the type of bill that will likely receive Congressional approval. This bill would raise the statutory minimum wage from 40¢ per hour to 65¢ per hour immediately; to 70¢ per hour two years after enactment; and to 75¢ per hour four years after enactment. While the increase may not be as great when the legislation is finally dispensed with, due to the opposition of Southern legislators,

Congressional sources say that the new minimum will be at least 55¢.

The limitation of time for employee suits was reduced in the bill from five years to two years with an added provision that accrued claims could be brought at any time within two years.

The section of the bill which proposes expansions in coverage would bring under the Act activities affecting commerce. Activities affecting commerce are defined to mean "any activity in commerce or necessary to commerce or competing with any activity in commerce or where the payment of wages at rates below those prescribed by this Act . . . would burden or obstruct or tend to burden or obstruct commerce or the free flow of commerce."

This definition would seem to cover practically all business activities, unless they are specifically exempted in the Act.

The retail and service establishment exemption is modified by the specification that it is inapplicable to employees of an employer having

(Continued on page 92)

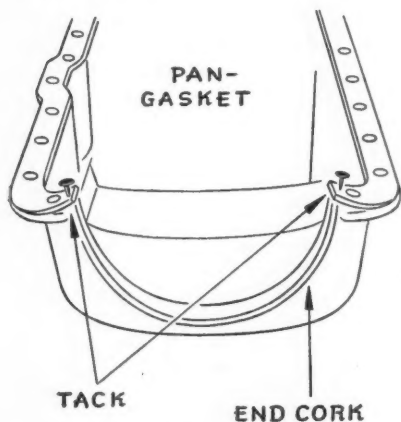
Here's your chance to pick up a little extra money. We'll pay five bucks (\$5.00) for every Shop Kink accepted and printed. So send 'em in to us—some short cut you use in doing a job easier and faster than the other fellow—some special tool you made when you couldn't buy one to do the job—and we'll do the rest. Incidentally we won't accept any that have previously appeared in any other automotive publication. Send 'em in!

SHOP KINKS

Side Gasket Aid

On oil pans with end corks, it is often very difficult to hold the ends of the side gaskets in place while putting up the pan.

To make this job easy, we take tacks about $\frac{1}{4}$ -inch long and put through the side gasket into the end corks. These tacks hold the gaskets in place and make the job easy.—*W. H. Stredwick, 2124 East 26th St., Vancouver, Wash.*



Rear Axle Shaft Tool

Here is a tool I made to remove Hudson and Terraplane rear axle shafts. I used a wheel knock-out, a heavy carriage bolt and a 3-lb. sledge hammer head. I slid the head on the bolt and welded the threaded end to the knocker. Just screw it on shaft and slip the sledge head a couple of raps and out comes the shaft.—*Dougald H. Munro, Rt. 1, Thief River Falls, Minn.*

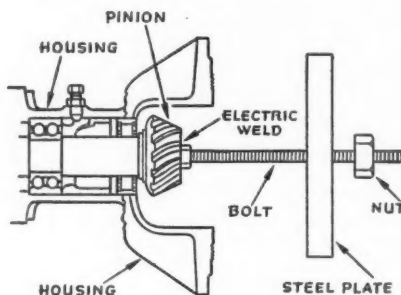
Steering Pin Replacement

To replace the intermediate steering arm pin on a Packard is quite an operation. I have found a way which really saves time. Remove the upper nut and run a $\frac{5}{16}$ -inch drill into bolt from bottom. Tap threads in bolt and make an inertia puller. Slam puller a couple of times and bolt will come out.—*Allan K. Smith, 47 E. Durham St., Germantown, Phila., Pa.*

Drive Shaft Removal

Chevrolet, Pontiac and Buick drive shafts at times are very hard to pull out especially when a drive shaft bearing fails or gets very hot.

In these cases we remove the differential carrier and take a $\frac{1}{2}$ -inch bolt long enough to reach from the pinion gear past the rear axle housing. We then slip the bolt through a hole in the center of a steel plate, and weld the end of the bolt to the center hole of the pinion gear. A nut, back of the steel plate drawn up tightly loosens the pinion and drive shaft without any trouble.—*Harry Hunt, Maitland, Mo.*



Brush Spring Tool

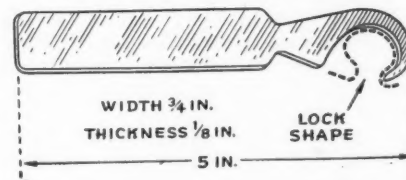
A simple tool for holding the brush springs on generators and starting motors can be made from an old choke wire or throttle rod that has been broken off. It is only necessary to cut



off the wire about a $\frac{1}{2}$ -inch from the handle, and then bend a hook on the end of the wire.—*Cecil Graves, Harley Graves Garage, 1138 E. Jackson St., Macomb, Ill.*

Lock Removal Tool

To facilitate pulling the lock from the window regulator handles and door handles on General Motors cars, we made the tool shown in the illus-



tration. We find that using this tool makes the job very easy as they are hard to pry out with a screw driver.—*E. S. Hamrock, 2980 25th St., N. W., Canton, Ohio.*

Stretching Gaskets

When cork gaskets have been in stock for some time, they shrink and difficulty is experienced when trying to use them.

I have found that by holding the gasket under tension and against a lighted electric bulb, the heat from the bulb will stretch the gasket back to the right size.—*Ivo Goedde, Box 997, Chelan, Wash.*



*The Studebaker Champion re-fashioned
the molecules of motoring...
and a new pattern for all cars is born!*

A new car for a new world when it first swung upon the motoring scene! A new car for a new world more than ever now! Still unchallenged in its lowest price field, the daringly different Studebaker Champion couldn't be built until the very molecules of motoring were rearranged! Surplus weight was successfully banished! Brilliant new performance was achieved! Deep-bedded new comfort principles were perfected! New levels of stability and sure-footedness were attained! And as crowning consummation of this quest for finer motoring...

a way was found to wring astonishing additional mileage out of every gallon of gasoline and multiply the life of every set of tires! This pattern, which the Studebaker Champion has clearly outlined for all the world to see, is now the lodestar for many a projected car!

But Studebaker, on the public's wave length ahead of anybody else, continues its pioneering. Studebaker ceaselessly keeps exploring the realms of research with mind and eye alert for still further contributions to the economy and enjoyment of your motoring!

© 1946, The Studebaker Corporation, South Bend 27, Indiana, U.S.A.

An ad that's
a tip-off
on tomorrow's
cars!
Did you read it
in Life,
Newsweek,
Time,
Collier's,
and other
magazines?

There's an ad that unquestionably only Studebaker could run

FOR a split second, you probably wondered what Studebaker meant by "the molecules of motoring" in the above advertisement.

Then, of course, you got it in a flash—a fast mental picture of the Studebaker Champion as it swung upon the scene with new ideas in engineering and construction—a car radically different from any the automobile industry ever knew.

You're 100% right, if you expect to see the Champion's advanced principles in many of the cars scheduled to succeed the present crop of 1946 models. How could anybody in the automobile business risk ignoring the formula that made the Champion make good?

In just weeks after it came out, the Champion set records in 'cross-continent tests and on the Indianap-

olis Speedway—it later topped its field in Gilmore Economy Run competition—scored decisively first for all-around low-cost operation in a year-long check of 11,539 fleet cars serving 50 big-name business firms—came through the war years with sensational gas and tire mileage—became and still remains one of the most sought after used cars.

So read that "molecules of motoring" ad of Studebaker's again, if you're really looking forward. There's plenty of meat and meaning there for all automobile dealers, not just for Studebaker dealers alone.

STUDEBAKER

South Bend 27, Indiana, U.S.A.

America's Friendliest Factory

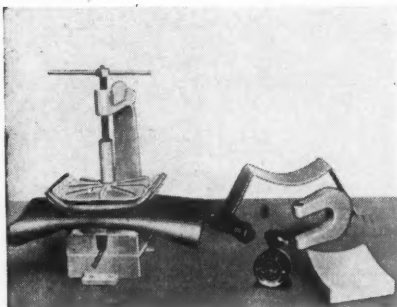


NEW PRODUCTS

New Tube and Tire Tread Vulcanizer Offered

The Service Master, a new tube and tire tread vulcanizer, has been announced by the Rockville Vulcanizer Equipment Co., of Long Island City, N. Y.

This comparatively low-priced unit, features the Plastomatic pressure "pillow," which permits uniform pres-



sure regardless of thickness variations, distributing the pressure over the entire area under repair.

Major tears can be rebuilt with the 4 in. x 6 in. Plastomatic vulcanizing capacity. The unit also handles sidewall spot repairs on tires up to 7:00, and straight and angle valve replacements.

"Insalize" Universal Liquid Insulator Now Available

The Lumanize Products Co. announce that their universal liquid insulator, "Insalize" is now available. Its high dielectric strength and resistance to moisture, heat, acids, alkalis and oils have the effect when applied to bare or insulated ignition and electrical systems of eliminating corrosion and of preventing current leakage.

"Insalize" has the property of eliminating corrosion on electrical connections and at battery and starter terminals; of correcting open shorts in armatures and fields of electric motors; of insulating coils, distributors, spark plugs, armatures and wiring; of reducing radio interference; and of assuring waterproof and leakproof insulation against water, condensation and fog which normally account for much starter trouble and faulty motor performance.

Address the company for "Insalize" literature and prices, at 141 W. Jackson Blvd., Chicago 4, Ill., Dept. 10.

General Purpose Sealing Compound Announced

A general-purpose thread and gasket sealing compound, to be known as Uniseal, is announced by Parket Appliance Co., Cleveland, Ohio.

A new product developed by the Parket research and special products division, Uniseal produces a seal which offers proof against air, water, steam, gas, gasoline, oil, hydraulic fluids, and the aromatics. Thorough testing it is reported has shown virtual insolubility in gasoline, kerosene, Stoddard solvent, benzene, xylene, carbon disulfide, the ketones, acetones and the various aromatic aviation fuels.

The Parker product is a paste of uniform consistency, containing no free metallic particles which might set up corrosion. The compound flows smoothly to form ribbon gaskets, and blends readily with cut gasket material.

It will be available in tubes and containers ranging from 8 oz. to 5 gallons.

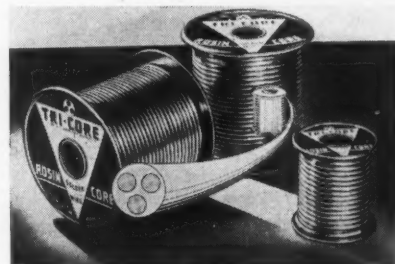
Window Display Offered

A three-piece window display, lithographed in eight colors, is available for Edison jobbers, dealers, and service stations handling Edison Spark Plugs. Featured are the Edison patented "Spun On" Leakproof Gasket and the complete line of Edison plugs. For counter use or limited window space, any one of the 3 pieces may be displayed separately.



New Type Solder Is Announced

Tri-Core, the solder with three independently filled cores of pure rosin flux is a new development of Alpha Metals, Inc., Brooklyn, N. Y. This new product offers users a faster soldering and elimination of dry joints, in addition to substantial savings in tin.



A continuous supply of high grade non-corrosive rosin flux is always present in Tri-Core Solder, as the three cores are completely independent of each other. With these three cores, occurrence of "dry" sections in more than one core at a given point is unlikely.

Bulletins and engineering test samples are available from Solder Development Division, Alpha Metals, Inc., 369 Hudson Ave., Brooklyn 1, N. Y.

New Development Provides Traction for Vehicles

"Tire-Trac," developed by Morton Mfg. Co., Chicago, is designed to provide traction for all types of motor transportation vehicles. In effect, it gives a car "footprints of steel" on all surfaces where traction fails. It is an application of the "half-track" principle, in portable form, which can be carried in the tool-kit or glove compartment.

A feature of "Tire-Trac" is its bumper pick-up cable. This cable, fastened to one end of the track, can be attached to the bumper of a car, so that the device is carried along with the car until the driver reaches a convenient place to stop. He can then recover his "Tire-Trac" without risk of stalling, or without having to wade through mud or snowdrifts.

The Light Model is designed for
(Continued on page 94)

advertisement is reproduced as it appears in The Saturday Evening Post, Popular Mechanics and Popular Science Monthly. A similar advertisement is featured in the farm market via Country Gentleman and Successful Farming.

for Power that Zooms in the spring..tra la!

● It's Spring again! And what a Spring . . . with gasoline galore and never-ending roads . . . with valleys and lakes, mountains and woodlands . . . all beckoning you to come on out and really live again.

It's what you've hoped for and dreamed about—and here it is, all yours!

But before you start out, you'll want Casite in your motor whether it's old or new. Casite tunes up older motors—restores smoothness and power. And it protects new motors during the critical break-in period.

Casite carries oil quickly to the tight spots . . . retards formation of sludge and gum . . . reduces engine wear . . . keeps motors clean and full of zip!

Millions of motorists have used Casite . . . and keep coming back for more. Put a pint in the crankcase every oil change and a pint through the air intake every three months. It's sold by service stations, car dealers and garages, everywhere.

THE CASITE CORPORATION, HASTINGS, MICHIGAN

CASITE

BETTER AND SMOOTHER PERFORMANCE or Double-Your-Money-Back

GUARANTEE—Add Casite to crankcase and run through air intake according to instructions, then drive your car 100 miles or for 60 days, whichever is first. If not convinced that Casite gives you better and smoother performance, you

get double-your-money-back by filling out guarantee certificate and mailing it to The Casite Corporation, Hastings, Michigan. Maximum refund is \$1.30 per pint, twice the nationally advertised price of Casite.



65¢ A PINT





CLEARING HOUSE

FOR SERVICEMEN'S QUERIES

Bill Toboldt, Editor, Motor Age

Clutch Problem

I have had a lot of troubles with automobiles, but always have seemed to get the right answers from somebody locally. Now I am really in a bad spot. Have exhausted all of my own ideas and also the boys in the shop. Have talked with the car dealer and everybody else that I thought might be able to help me solve the problem. I have not, however, written the factory as yet.

My problem is a 1934, 355 Cadillac clutch that will not release.

It all started when I removed the clutch for replacing the throw-out bearing and relined the clutch disks for grabbing and squealing.

I have had the clutch assembly to the parts house doing clutch rebuilding for relining and rebuilding. After the second trip to the rebuilding shop, it still would not release.

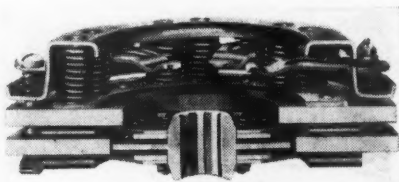
The best I have been able to get out of it so far is with the floor boards out to set the clutch pedal stop almost at the bottom, and the release bearing just about riding the fingers. Then it will release about an inch from the bottom of the full release travel of the clutch pedal. With the floor boards in, it will not release even with a little release bearing pressure on the fingers.

This clutch is the two disk type.

If you have the specifications on this clutch, or have any suggestions as to what may be the trouble, or know where I might get this information, I would be very much obliged to you.—A. E. Staubridge, A & E Garage, 319 N. 7th West, Salt Lake City, Utah.

IN regard to the trouble you were having with a 1934 Cadillac clutch, I am quite sure you will find the trouble to be caused by the plates being too thick, or by the fact that the clutch shaft might be worn so that the disks stick on the splines.

I would suggest you check these two points and I am quite certain you will be able to overcome your trouble.



Loud Tappet Noise

One of my customers has a 1937 Plymouth which has developed a loud tappet noise. I ground the valves, adjusted the tappets to the proper clearance, and the noise is still there. I have traced it to the valve lifter that works off the camshaft. Will you advise me on what procedure I have to go through to install this lifter? I have never had occasion to install one before as they very seldom ever give any trouble. Also please advise if I can install a front main bearing on this same car without removing the timing case cover.—C. A. Markham, Markham's Service Station, U. S. 16 at Saranac Corner, Saranac, Mich.

TO replace the valve lifter on the Plymouth car it is necessary to remove the camshaft. This is withdrawn from the front end of the engine but before that can be done it is necessary to remove the radiator, timing case cover and also block up all of the valve lifters in the wide open position. It is also necessary to remove the oil pump and fuel pump.

In regard to installing a front main bearing, the usual procedure is to break the die casting which surrounds it and then withdraw the bearing; however, before doing this you have to be sure you can replace the die casting. If you can't obtain this part it is necessary to completely dismantle the engine.

Valve Spring Trouble

We have a 1938 Graham with a continental motor, which has been driven approximately 32,300 miles. The motor has never been overhauled, with the exception of having a head gasket and a new timing chain installed.

There is constant valve spring trouble. Valve springs have been installed in the car at two other garages and the owner came to us with another broken valve spring, at which time we learned from him of his previous difficulty with the car.

He claims that about once a month a valve spring breaks, and furthermore, the car never has any power.

We have checked the following:

- 1) oil seal on the crankshaft cover, which leaked oil bad
- 2) installed a new timing chain
- 3) a new carburetor
- 4) a new valve cover breather and
- 5) the broken valve spring

However, we noticed that the No. 1 valve spring was rusty, and No. 2 and No. 3 valve springs are starting to rust. Nevertheless, it does not break the rusty springs or the new springs which have been recently replaced, but always another. All new valve springs have been installed six months ago.

The owner of this car never had any sticky valves.

The valves are set at proper specification clearance — 10 thousandths hot. Two weeks ago we had repaired the car thoroughly and put in some compound for cracked blocks. Nevertheless, the customer has come back with another broken valve spring.

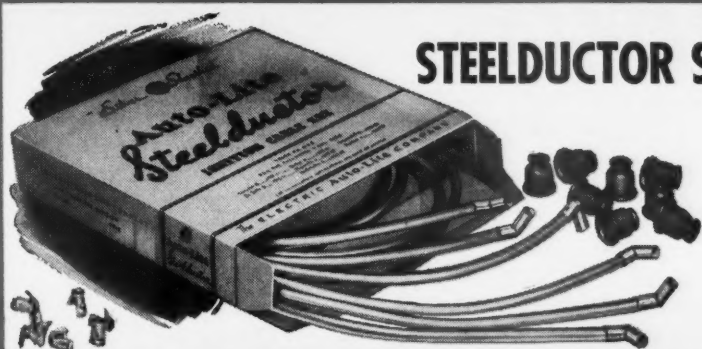
If you can help us in any way with this problem, we would greatly appreciate it.

We have returned from the service and re-opened our garage, and we would like to have a good standing

(Continued on page 52)

*Switch
to-*

AUTO-LITE



STEELDUCTOR SPARK PLUG WIRE SETS

Auto-Lite furnishes spark plug wires in both copper and in Steelductor, an automotive type of the 7 strand stainless steel conductor proved on America's fighting planes. Available on Spools or convenient ready-to-install sets complete with terminals.

BATTERY CABLE WITH ANTI-CORRODE TERMINAL

Properly installed, Auto-Lite Battery Cable with the revolutionary Anti-Corrode Terminal resists corrosion that builds resistance and restricts proper current flow to the starter and other electrical units.



LOW TENSION WIRE

Auto-Lite wire and cable is a complete line, for every automotive use. Wire for lighting and other low tension circuits is available in many shapes, sizes and insulation materials. A new catalog giving complete specifications of Auto-Lite automotive wire, both on spools and cut-to-length sets, will soon be off the press. Write for your copy.

THE ELECTRIC AUTO-LITE COMPANY

Toronto, Ontario

Toledo 1, Ohio

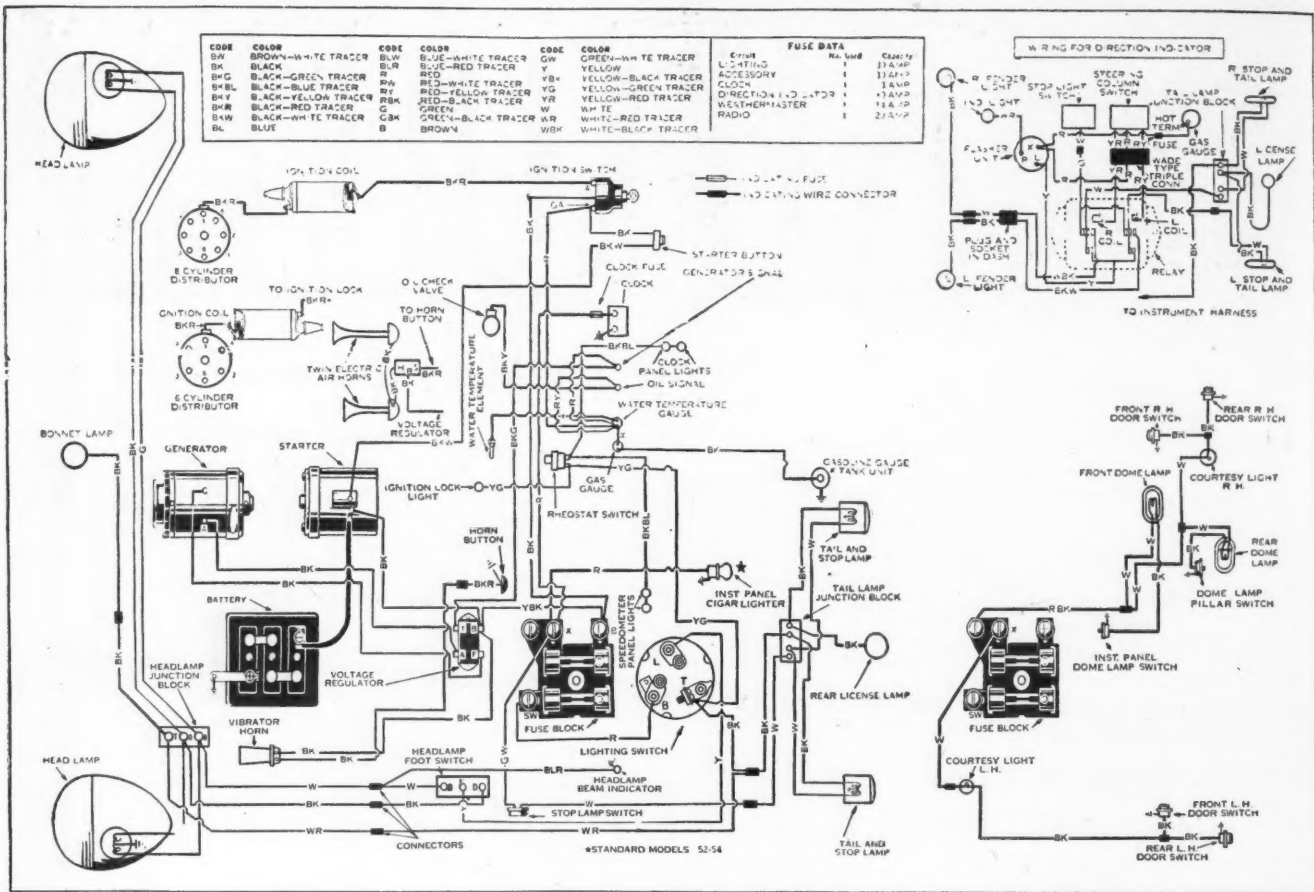
AUTO-LITE
Automotive Wire & Cable

RSD
MERCHANDISING
AUTO-LITE
REGISTERED SERVICE
DEALER

Investigate the 4-way advantage of the Auto-Lite Registered Service Dealer plan: (1) Registered Service, (2) Contract Price, (3) Adequate Inventory, (4) National Advertising.

TUNE IN THE AUTO-LITE RADIO SHOW STARRING DICK HAYMES — EVERY SATURDAY NIGHT, 8:00 P.M. — E. T. ON CBS
APRIL, 1946

When writing to advertisers please mention Motor Age



1946 Hudson Wiring Diagram

Clearing House

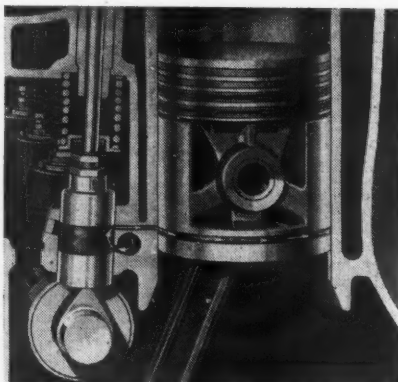
(Continued from page 50)

with our customers. Thank you for any help whatsoever.—Joseph Maruszczak, Joe's Garage, 2326 Commor St., Hamtramck 12, Mich.

I AM quite sure that you are on the right track in overcoming the valve spring breakage trouble on the 1938 Graham when you use some compound to overcome any cracks in the block. Invariably, excessive valve spring breakage such as you describe is a result of water or moisture in the lubricating oil. This moisture can come from any cracks in the water jacket, or it can result if the car is stored in an excessively damp garage where moisture will condense in the crankcase in excessive quantities.

I would suggest that you first of all thoroughly clean out the water jacket with a strong solution of some cleaner which will completely dissolve any rust that may be present. After the block is thoroughly clean, I would seal the lower hose connection. Then apply compressed air at the upper hose connection, listening carefully for any air leaks. Removal of the valve cover plate, oil pans and

pistons should assist materially in locating any such leak. The usual place for such leaks is around the valve chamber and, of course, defective head gaskets. Of course, oil should be changed to remove any possible accumulation of moisture, and you should point out to the owner



that if the car is driven only short distances, there is not sufficient heat generated to evaporate any of the condensed moisture in the crankcase. If the car is driven only short distances it is advisable to change oil more frequently than normal.

Oil Pressure Problem

I have an oil pressure problem that just about has me screwy. I have a Pierce Arrow twelve, 1936, Model 1602 with about 48,000 miles on it. When starting the motor cold, I get about seventy-five pounds oil pressure, after the motor has run for about an hour the pressure drops to about five pounds.

I took the motor down, fitted new rings, new oversize wrist pins, took up on the mains and con rod bearings. I plugged the little oil squirter holes in the rods. Took out the cam shaft and made some brass plugs with 1/16 holes to drive down into the holes that feed oil to the hollow cam shaft. I have checked for cracks with an oil bearing pressure tank; but without finding any cracks in the oil lines. I have worked on Pierces for a long time, and this is the first one that I can't lick on oil pressure. It's not a common occurrence for Pierces to have poor oil pressure.

The Pierce factory went out of business so I can't get an oil system diagram from them. I have a National Service Manual as well as the Chilton issues since Chilton began publishing. I cannot find any dope in either publication that gives me any help. Do you know where I could get

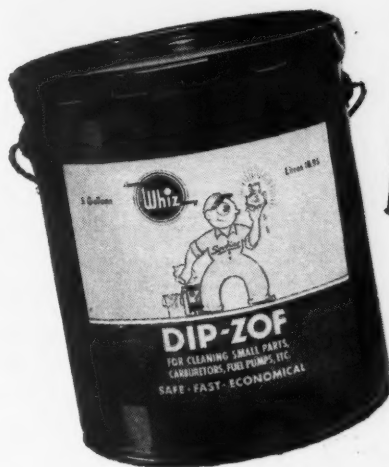
(Continued on page 56)



It's Easy
**TO CLEAN SMALL PARTS
 AND GET RID OF GREASE**
THE *Whiz* WAY!

Here's the combination that licks those tough degreasing and cleaning jobs! HO-ZOF for degreasing floors, engines, engine parts, tools, machinery, work pits . . . DIP-ZOF for cleaning carburetors, fuel pumps, small metal parts!

HO-ZOF and DIP-ZOF do the job *chemically*—save time and labor; do a better job quicker! No special equipment required. DIP-ZOF is available with or without wire dipping basket. Order these time and labor saving WHIZ products today. R. M. Hollingshead Corporation, Camden, New Jersey; Toronto, Canada.



PRODUCTS OF
Hollingshead
 LEADER IN MAINTENANCE CHEMICALS

New Hydraulic Auto Jack Is Announced

A new hydraulic automobile jack embodying all the latest developments in hydraulic and new metal alloys is announced by March Engineering Co., Oshkosh, Wis. Mass production is now under way and the jacks are ready for distribution nationally under the trade name "Meco Lift King." The 3 different models are designated as "Senior," "Junior," and "Midget." The "Senior" model has a fully extended height of

41 in. and weighs only 19½ lb.

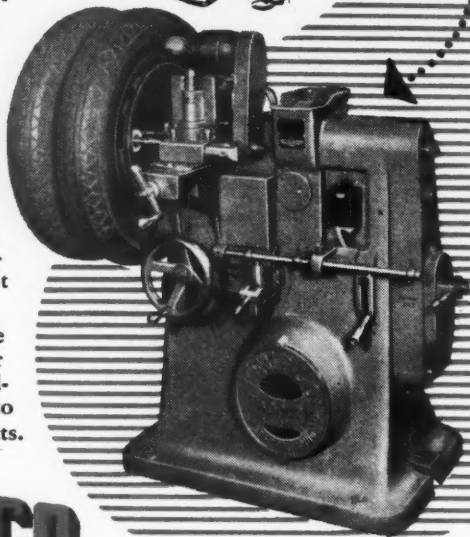
Designed to lift a rated capacity of 4000 lb. on the lift hook and 6000 lb. on the top cap, this jack is for use with both automobiles and light farm tractors. Of steel construction combined with an aluminum alloy providing a maximum tensile strength, the three models have total extended heights of 41 in., 35 in., and 29 in. For special deep-rolled bumpers such as on the Cadillac and Buick these jacks are equipped with special attachments that make it possible to lift from ground level.

MORE PROFIT FROM BRAKE JOBS..

Brake service is profitable —helps sell other long profit items. But you can make your brake service pay even greater dividends with a Lempco Brake Drum Lathe.

No brake job is complete without drum truing, to correct bulged, bell mouthed, scored or eccentric drums. A Lempco Lathe will make any truck, bus or passenger car drum, factory-perfect. It turns, then grinds to a satin-smooth finish. Only one set-up required for turning and grinding. Has powerful, heavy-duty, positive gear-type feed that can't slip.

Choose the Lempco Brake Drum Lathe that fits your needs from 11 different models. Price from \$335.50 to \$2,900. Write for all the facts.



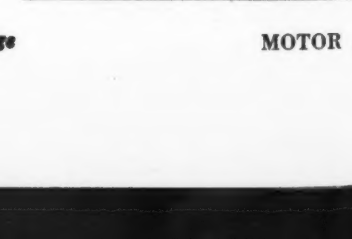
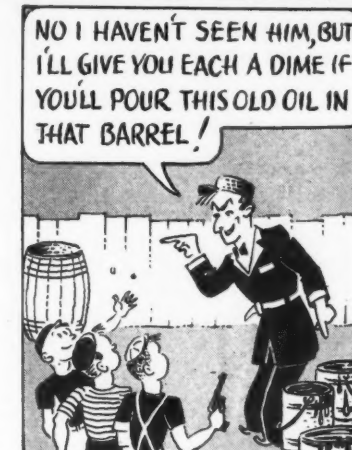
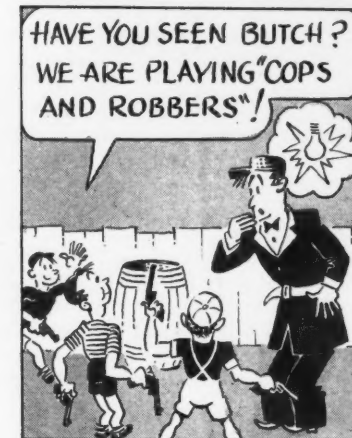
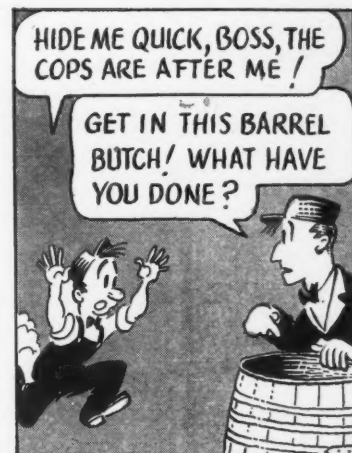
MODEL C

LEMPCO

5727 DUNHAM ROAD • BEDFORD, OHIO

MANUFACTURERS OF CRANKSHAFT • CLUTCH PLATE • FLYWHEEL
CONROD • WET SURFACE • BRAKE SHOE AND BRAKE DRUM
GRINDERS AND LATHES • CYLINDER REAMERS AND REAMER DRIVE
AND LINE BORING BARS • ELECTRIC AND HYDRAULIC PRESSES

BUTCH



Exide

BATTERIES



"MY GENERAL SHERMAN TANK HAD **EXIDE** POWER"

"And Exides sure gave good service. We saw them on nearly everything that moved."

Yes, more car and truck owners than ever know Exides, have confidence in them.

That means Big Business for the Exide Dealer. Strong national advertising, "know how" merchandising, and Exide prestige will keep business growing. More than ever "It's good to be an Exide Dealer."

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto

Clearing House

(Continued from page 52)

an oil system diagram for this motor?

I have the Pierce Arrow operation and care book that came with the car a paragraph says—

(5) Oil Temperature Regulator

The oil temperature regulator mounted on the left side of the engine regulates the temperature of the oil in the engine. Entirely automatic in its operations, this unit requires no adjustment.

An excessive accumulation of sedi-

ment in the oil temperature regulator will cause an increase in oil temperature. In order to keep this unit functioning properly it must be cleaned at least every 20,000 miles. This should be done by a Pierce Arrow service station.

I have looked, and had my mechanic look for this oil temperature regulator on the left side of the motor. Took the oil pan off again to look inside the motor for it, but no can find.

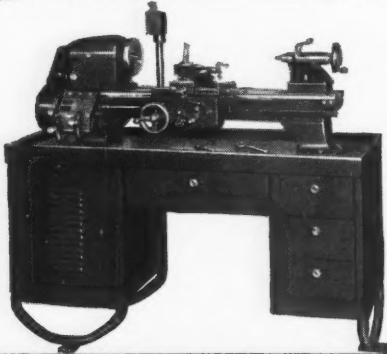
The starter is mounted on the left side of the motor as stated so I am searching for this regulator on the correct side of the motor.

It does have one of those oil coolers on the right side. A Harrison radiator affair, but it is on the wrong side of the motor according to the information in the book.

In the books issued for 1934 cars, they also refer to the Harrison radiator oil device as a cooler and not an oil temperature regulator.

If you can help me out on this sticker I would be very grateful.—Victor Petry, 1625 Pacific Ave., San Francisco, Calif.

Logan A NAME TO REMEMBER WHEN YOU THINK OF BETTER LATHES



at these 39 points* this Logan Lathe has self-lubricating bronze bearings

| LOCATION | NO. BEARINGS |
|----------------------|--------------|
| Underneath Drive | 8 |
| Reverse Gear Bracket | 2 |
| Gear Box | 10 |
| Headstock | 7 |
| Automatic Apron | 6 |
| Carriage Assembly | 6 |
| TOTAL | 39 |

*All models of Logan Lathes are similarly protected.

**SELF-LUBRICATING
BRONZE BEARINGS**

**KEEP LOGAN LATHES READY TO RUN,
ADD TO SERVICE LIFE,
NEED FAR LESS OILING**

The use of self-lubricating bronze bearings in place of plain bearings is typical of Logan Lathe design. The self-lubricating bearings are of a special bronze that is absorbent in texture and impregnated with lubricant. As a shaft revolves in one of these bearings, the lubricant is gradually released in a self-controlled flow which keeps an even film of oil over contacting surfaces. In this way, even though the lubricant is only infrequently renewed, the bearing surfaces are protected. In addition, the spindle on every Logan Lathe revolves on precision preloaded ball bearings that never need lubrication. This sustained lubrication is another factor in the sustained accuracy and long life of Logan Lathes. Get the full story of the advantages offered by the complete line of Logan Lathes from your Logan Lathe dealer, or write for a catalog.

SPECIFICATIONS COMMON TO ALL LOGAN LATHES . . . swing over bed, 10 1/2" . . . bed length, 43 1/4" . . . size of hole through spindle, 25/32" . . . spindle nose diameter and threads per inch, 1 1/2"-8 . . . 12 spindle speeds, 30 to 1450 rpm . . . motor, 1/2 hp, 1750 rpm . . . ball bearing spindle mounting . . . drum type reversing motor switch and cord . . . precision-ground ways, 2 V-ways, 2 flat-ways.

J-2-M

LOGAN ENGINEERING CO. CHICAGO 30, ILLINOIS

I HAVE been endeavoring to get complete information on this car but one thing is not clear, and that is when you made an oil pressure test. Have you checked the amount of oil leaking from the bearings? You mention that you did not find any cracks in the oil lines. If you did not check the leakage from the bearings at that time, I would suggest that you do so, and any of them that are leaking in excess of approximately 60 drops a minute should be replaced. I would also recommend that you install a new oil pump. If you are not able to obtain one, possibly the old one can be rebuilt to insure that it is in perfect condition.

In regard to the oil temperature regulator, which the Pierce Arrow operation book describes as being on the left side of the engine, I have no information. It occurs to me that possibly they are referring to the oil cooler on the right side which I think you could describe as being an oil temperature regulator. If you have not cleaned out the oil cooler, I would suggest that you do so. Probably the easiest way is to remove it and flush it with kerosene, or some other cleaning solution.

I do not see that this unit would cause your oil pressure to drop. I think you would more likely find the difficulty in a defective oil pump or
(Continued on page 60)



None Better
and ALL from
One Source

There is a Jobber
near you
who
can supply



WAGNER LOCKHEED

Hydraulic Brake Parts, Kits, Assortments, and Fluid

There are many good reasons why it pays to use Wagner Lockheed hydraulic brake parts and fluid. Chief among them is the fact that money cannot buy better brake parts or better brake fluid than Wagner Lockheed—and the *best* product is the only one that's "good enough" where your customer's safety, as well as your own reputation, is at stake. Don't gamble your reputation by using inferior parts and fluid. Your nearby Wagner jobber can supply genuine Wagner Lockheed parts and fluid.

Wagner Lockheed is the *one complete line* of replacement parts and fluid for *all* hydraulic brakes. One source—your Wagner

jobber—can supply your *entire* requirements no matter what makes of cars, trucks, and buses you service.

No. 21 HYDRAULIC BRAKE FLUID is an all-weather fluid for ALL hydraulic brake systems. It completely and properly mixes with other approved fluids and retains its highly efficient qualities under all driving conditions.

Ask your Wagner jobber for Catalog HU-122 on the Wagner Lockheed line. There is one near you, but if you don't know his name, write to us and we'll gladly send you a copy. Wagner Electric Corporation, 6498 Plymouth Avenue, St. Louis 14, Mo., U. S. A.

H46-6

... And as for
BRAKE LINING
there's none better than
WAGNER
CoMaX
BRAKE LINING
Easy on drums... wears
slowly... uniform...
grips silently... Does
not compress or swell.
Ask for Wagner CoMaX
Catalog BU-128.

LOCKHEED HYDRAULIC BRAKE PARTS AND
FLUID... NoReL... CoMaX BRAKE LINING

AIR BRAKES... TACHOGRAPHS... ELECTRIC MO-
TORS... TRANSFORMERS... INDUSTRIAL BRAKES

Wagner **WE** Electric

Remind your customers "BRAKE FLUID SHOULD BE CHECKED TWICE A YEAR"

Switch to—
AUTO-LITE
BATTERIES



Dick Haymes
star of the
AUTO-LITE SHOW • SATURDAY NIGHTS • 149 STATIONS ON CBS

Here's what we tell your customers coast-to-coast Saturday nights on C.B.S.

MARTIN:

VOICE:

Is your car hard to start? Maybe it's the battery. If so —
(THROUGH ECHO CHAMBER) Switch to Auto-Lite.

MARTIN:

Yes, let the friendly, helpful Auto-Lite Battery Dealer in
your neighborhood give your present battery expert Auto-Lite
service.
(THROUGH ECHO CHAMBER) Switch to Auto-Lite.

VOICE:

MARTIN:

And the next time you MUST buy a new car battery — switch
to Auto-Lite. Auto-Lite Batteries are built by the organi-
zation that makes Auto-Lite Spark Plugs, Auto-Lite distri-
butors, starting motors and generators — complete electrical
systems for many makes of our finest cars and trucks. That's
why money cannot buy a better battery than Auto-Lite. So,
no matter what make of car you drive — no matter what
battery you're now using — for long life — for dependable
power
(THROUGH ECHO CHAMBER) Switch to Auto-Lite.

VOICE:

(THROUGH ECHO CHAMBER)

Switch to Auto-Lite.



*1 in 3 car makers specify
Auto-Lite Batteries as original equipment*

AUTO-LITE BATTERY CORPORATION
TOLEDO 1, OHIO

Plants at: Niagara Falls • Atlanta • Indianapolis • Oakland • Oklahoma City • Toronto

Clearing House

(Continued from page 56)

excessive leakage at some point in the engine. I would pay particular attention to oil leaks at the ends of the cam shaft. As this engine has pressure lubrication to the wrist pins, I would make certain that there is no leakage at this point. While I understand that you have installed new wrist pins, it is well to double check and make sure there is no leakage at these points.

It is rather difficult to determine leaks from the ends of the cam shaft

without removing the fly-wheel, for in most cases it appears that the rear main bearing is leaking when actually the oil is coming from the cam shaft.

Oil Pump Gear Trouble

We have been having trouble with a 1937 Terraplane oil pump gear, and oil pump driving gear on cam shaft goes out.

A new cam shaft was replaced and pump gear, and it run about 1200

miles and out went oil pump gear and cam shaft gear that drives oil pump.

Can you give us the reason for this condition? A new thrust washer was installed on the last new one.

It is still running, but we are not sure that it won't happen again.

Any information in regard to this will be greatly appreciated.—R. E. Rector, Cuba Motor Co., Cuba, Ill.

THERE are several things which might be causing the trouble you are experiencing with the oil pump gear on the 1937 Terraplane. Since you have installed a new cam shaft, the most probable cause is excessive end play of the cam shaft. I would suggest that you check this carefully, making certain that it is not in excess of .005 inches. I think that the best plan for you would be to carefully check the mesh of the gears with Prussian blue in the same manner which is followed checking a rear axle pinion end ring gear. Be careful to apply only a very thin coating of Prussian blue so as to get an accurate impression or marking of the gear teeth. This will enable you to judge what the difficulty might be and also how to correct it.

I am quite sure that you will find that the difficulty is the result of excessive end play of the cam shaft or the pump itself.

Vapor Lock

I have a 1938 C-19 Imperial Chrysler that vapor locks every time the engine gets to its normal temperature.

I have put in a new carburetor kit, also repaired the fuel pump and put asbestos lagging on the fuel lines. All of this did not help.

When the vapor lock occurs, I take the vapor dome off the fuel pump. Air and fuel flows out for about five minutes. The car will run O.K. after this is done.

The engine operates very good at all speeds. When the car is stopped, (Continued on page 82)



Airco Oxygen...

...ALL YOU NEED...WHEN YOU NEED IT!

Whether you need a hundred cubic feet or a million... whether you need an occasional cylinder or a constant supply of high purity oxygen... there's an Airco depot near you ready to meet all your requirements — with the right type of "package."

If your consumption of oxygen is large, the Airco trailer delivery system offers the greatest measure of convenience and economy. Oxygen is available in trailer capacities of approximately 10,000, 20,000, and 40,000 cubic feet. These can be placed at any suitable location of your plant.

If your consumption is moderate or small, Airco oxygen is delivered in standard steel cylinders in whatever number and frequencies best

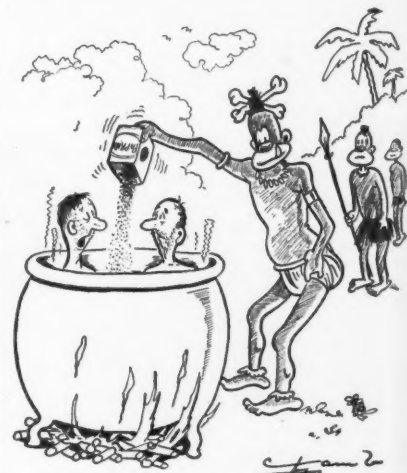
serve you. But whether small or large, your requirement is filled the way you want it.

Airco has always pioneered in the creation of new and better methods of oxygen delivery—and Airco looks to the future! Tomorrow, you can expect even more important improvements—thanks to Airco's foresighted research and development program.

An interesting booklet—"Oxygen — Indispensable Servant of Industry" — is available. Write for your copy today. Address: Air Reduction, 60 E. 42nd St., New York 17, N. Y. In Texas: Magnolia Airco Gas Products Co., Houston 1, Texas.



AIR REDUCTION
Offices in All Principal Cities



"I've been a cook for twenty years, and I tell you this guy's using too much paprika!"

1ST

IN SPEED

Circo Chief

DEGREASER

Speed is one thing.. speed combined with thoroughness in parts cleaning is something else but this combination can be had with a Circo "Chief" degreaser. You get speed, thoroughness plus simplicity in design and operation.

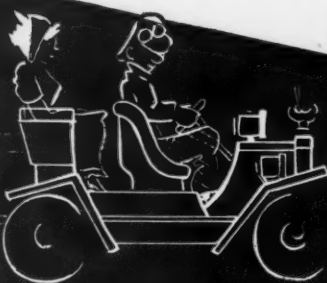
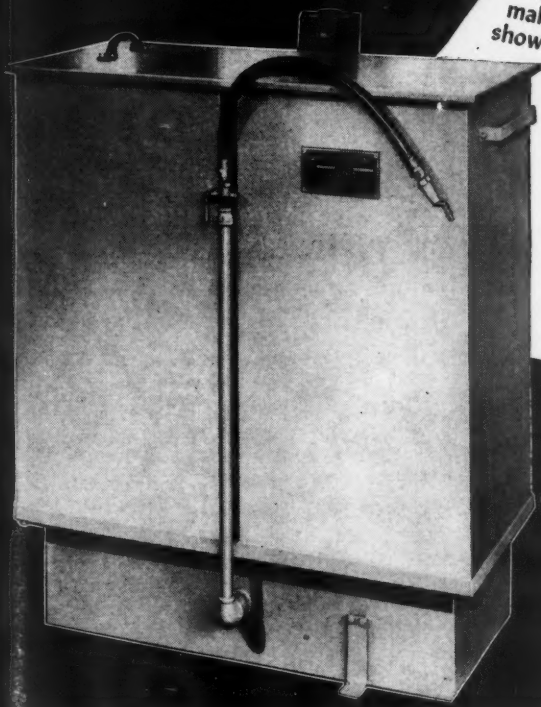
The worth of any piece of equipment depends upon what it can actually do and here are the facts on a Circo "Chief" degreaser. It will outperform any other cleaning unit, is the fastest, easiest to operate and most economical cleaning method known. It will turn out more work faster, easier, cheaper and in less time. There is no phase of parts cleaning in which Circo "Chief" degreaser does not excell.

If you employ two or more mechanics we can prove by your own figures that a Circo "Chief" will pay for itself in a very short time. A Circo "Chief" will release your mechanic from a "scrub job" to a paying repair job, where he can make more money for you and himself. Circo "Chief" will show a profit on every cleaning job, it also starts all repair work off on a profitable basis because parts are clean, dry and easy for the mechanic to handle.

Send for free bulletin on Circo "Chief" degreaser.

CIRCO

PRODUCTS COMPANY
2835 CHESTER AVE., CLEVELAND 14, OHIO



ANOTHER
FAMOUS FIRST
IN 1906

the high powered run-
abouts with rumble seats
were the tops in style

Ignition Trouble-Shooting

(Continued from page 22)

will help to diagnose engine troubles which might be due to ignition. Naturally, for a complete diagnosis of the various ignition components special ignition testing equipment—coil and condenser tester, distributor analyzer, point gage—must be used.

ENGINE WILL NOT START

If the engine cranks at normal speed but will not start, it could be

due to ignition or carburetion. Check the ignition system by removing a lead from one of the spark plug terminals, and holding the lead clip about 3/16" from the engine block. Then crank the engine to see if a spark occurs. If a healthy spark jumps from the clip to the engine block, the ignition primary and secondary circuits are probably okay and the trouble is partially due to poor carburetion (car-

buretor, fuel pump, fuel lines).

If a spark does not occur, then something is wrong in the ignition system. Check the dash ammeter while cranking. If the car does not have a dash ammeter, connect an ammeter into the ignition primary circuit (at the distributor would be a good place) in order to check the primary current. If there is a small reading which fluctuates somewhat during cranking, the primary is probably okay and the trouble is due to the secondary not being able to deliver a spark. See "Loss of Energy in Secondary Circuit" above.

If there is no primary current draw, the primary circuit is open due to loose connections, defective wiring or switch, to the distributor contact points not making contact or an open coil primary.

If the ammeter shows a reading of several amperes but the ammeter needle does not fluctuate during cranking, either the contact points are out of adjustment so they do not open, or the coil primary circuit is grounded.

ENGINE RUNS BUT NOT SATISFACTORILY

When an engine starts, but does not run satisfactorily (missing, loss of power, poor acceleration, etc.), a complete engine tune-up is usually in order because there are so many different conditions which can produce this trouble. If the engine misses, and the miss can be traced to certain cylinders, it could be due to a defective or fouled spark plug and the plug can be replaced or cleaned to see if this eliminates the miss.

Other conditions in the ignition system which might cause the trouble will be located during engine tune-up as the various ignition components are properly checked. Checking of the coil, condenser, distributor, spark plugs, and wiring will be covered in the next issue of MOTOR AGE.



"Holy Grail, heck! I'm looking for a good five-cent cigar!"

K&W ADVERTISING TO CAR OWNERS

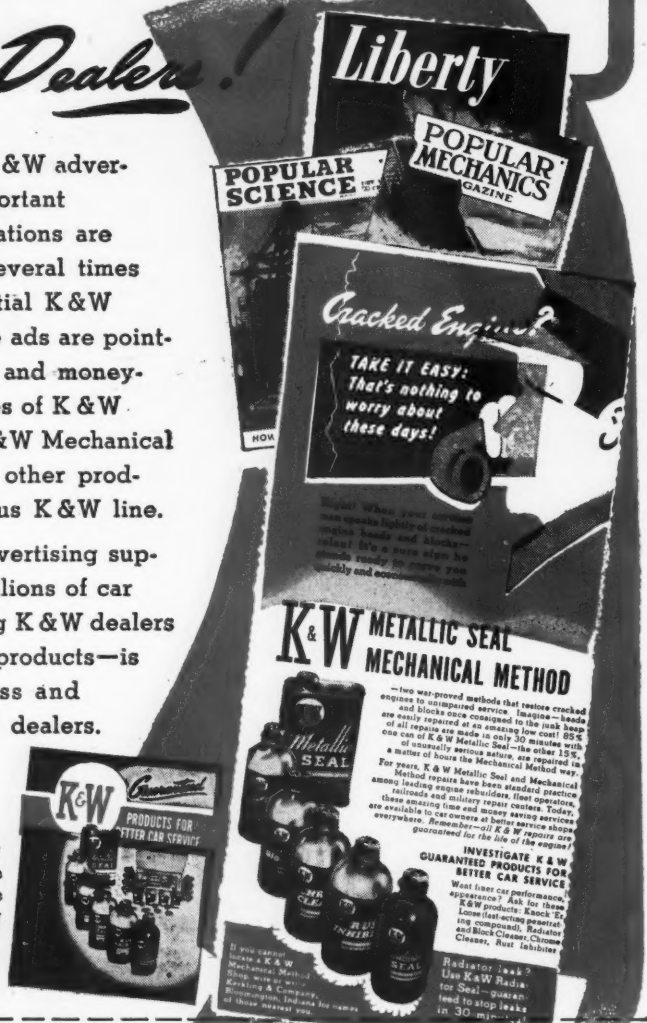
IS BUILDING BUSINESS FOR

K&W Dealers!

Over 3 million K&W advertisements in important consumer publications are being read by several times that many potential K&W customers. These ads are pointing out the time and money-saving advantages of K&W Metallic Seal, K&W Mechanical Method and the other products in the famous K&W line.

This powerful advertising support direct to millions of car owners is helping K&W dealers sell more K&W products—is building business and profits for K&W dealers.

Send for this free catalog! Now ready—the new K&W Complete Line Catalog. Mail the coupon for your copy today!



COUPON

Kerklings & Co., Burbank, California
Send me the K&W catalog:

Name.....

Address.....

City..... State.....

S

When writing to advertisers please mention Motor Age

MOTOR AGE

MOPAR SERVICE PACKAGES

*"They Save Time...
Make Us More Profit"*

*...and Build Customer
Good Will, too!"*



Yes, garagemen everywhere know that it saves time and makes every repair job more profitable to have available in one package both the *right* parts and *all* the parts needed for the job. That's exactly what you get in MoPar Service Packages.

MoPar Parts are designed by the engineers who built the vehicles. They are factory-inspected, exactly as the factory-installed parts they replace. Therefore, they install easier . . . wear longer . . . and build customer good will.

MoPar Service Packages are available for Water Pump, Brake Lining, Wheel Cylinder, and many other service jobs.

NOTE TO ALL REPAIR SHOPS

If you need Service Packages or individual parts of any kind for a Plymouth, Dodge, De Soto, or Chrysler, obtain them from a dealer for these vehicles.

Plymouth

DODGE

DeSoto

CHRYSLER

DODGE *Job-Rated* TRUCKS

Hear America's most popular conductor—Andre Kostelanetz and his "Music Millions Love"
with famous guest stars—every Thursday, C.B.S., 9 P.M., E.T.

CHRYSLER CORPORATION — PARTS DIVISION, DETROIT 31, MICHIGAN

NADA Spurs Dealer Discount Battle

(Continued from page 23)

doing business shall expire with the lifting of price controls in a given industry and that thereafter any attempt to continue such controls shall be illegal.

It has been under OPA's interpretation of section 2(h) of the pricing act, that dealers have suffered much. In a manner which dealers regard as wholly contrary to the intent of Congress, OPA during the administration of Mr. Bowles sought persistently to

change the trade practices and lower trade discounts of retail automobile dealers. Dealers may still be called upon to bear increased steel costs. NADA contends that if Section 2(h) of the Emergency Price Control Act were interpreted by OPA as Congress intended it should be, the retail automobile dealers of the United States today would be enjoying their normal average trade discount of 24 per cent. Under it, no more than 75

per cent of the income tax paying dealers ever made money.

Last fall automobile dealers protested against OPA's first attempt to lower their established discount. OPA firmly contended at that time that dealers could easily absorb a cut of from 11 to 13 per cent. However, Mr. Bowles admitted that details for the survey had only been obtained from only 300 dealers out of 32,000 in the nation. Less than one per cent of the trade. On this unfair and inadequate basis, OPA is still inflicting price cuts.

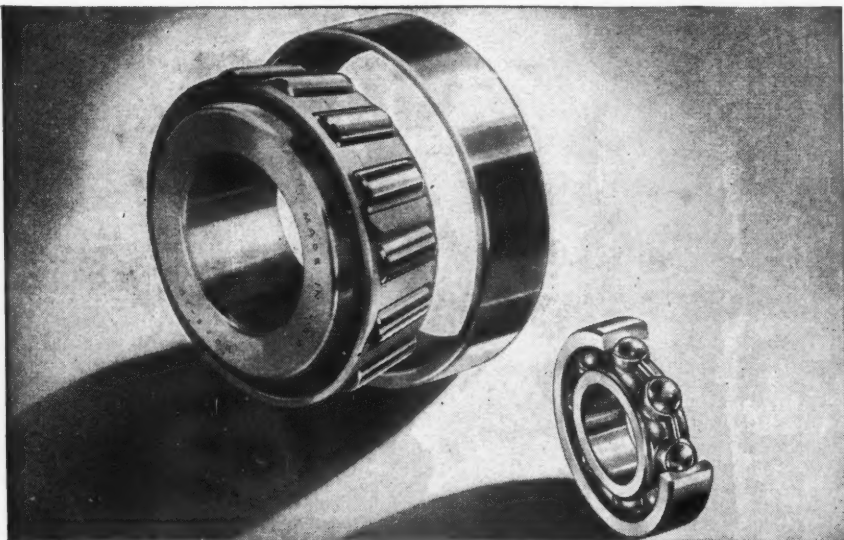
Huge imaginary profits on unproduced and undelivered cars have been forecasted by OPA officials during the past six months President Mallon pointed out. On these "pipe dream" figures, trade discount cuts are being assessed against dealers. Factors such as strikes, labor shortages, cost of material and other inter-related problems are not even a consideration as far as OPA is concerned. Its imaginary figures on car production and deliveries, OPA firmly believes, are stable and correct.

On November 13, 1945, Mr. Bowles appeared before the House Small Business Committee and predicted an average annual new car production of about four million by March 1946. It is now March, 1946, and according to Civilian Production Administration reports, Mr. Bowles estimate was slightly more than 800 per cent too high, Mallon told the Committee.

From last July up to March 1, 1946, exactly 190,000 units had been produced. That is an average of 23,779 cars per month, or a rate of less than 300,000 per year. This is a glaring example of OPA miscalculation.

Dealers in every part of the country are being questioned as to when new cars will appear in quantity production. No one can answer that. Even the best informed production men in

(Continued on page 68)



The Art of Saying Nothing ... *Eloquently*

There's one silence that is never boring, that "tells" you what you want urgently to know . . . the efficient, workmanlike silence of Ahlberg Bearings. It speaks eloquently of troubles prevented before they happen . . . "All's Well." You get an all-inclusive service from Ahlberg jobbers.

- A complete line of ball and roller bearings: light weight, heavy duty, thrust load, radial, self aligning
- . . . and an up-to-the-minute counsel on newly developed application designs. A good idea—see your jobber or call Ahlberg.



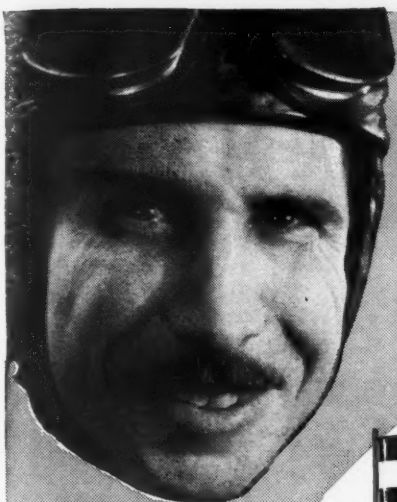
AHLBERG

BEARING COMPANY

3028 WEST 47TH STREET
CHICAGO 32, ILLINOIS



"Your time is up—Deposit another slug, please!"



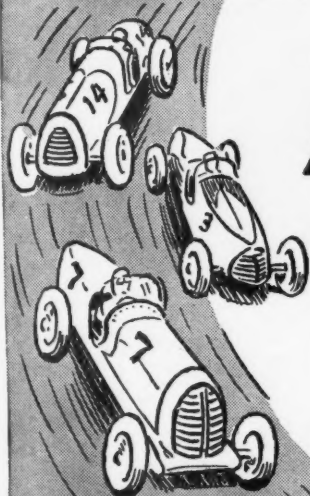
Behind the Wheel-MAURI ROSE Under the Hood-BLUE CROWNS

MAURI ROSE
again seeks the
Checked Flag, the
symbol of victory



...At the Indianapolis 1946 500-Mile Race

Co-winner in the 1941 Classic, Mauri Rose will compete again, in the first Memorial Day Classic since then — driving BLUE CROWN'S new 1946 Racer! Super-tested in the laboratory, on the street and highway, in the great race — BLUE CROWN HUSKIES have earned the coveted confidence of this No. 1 driver.

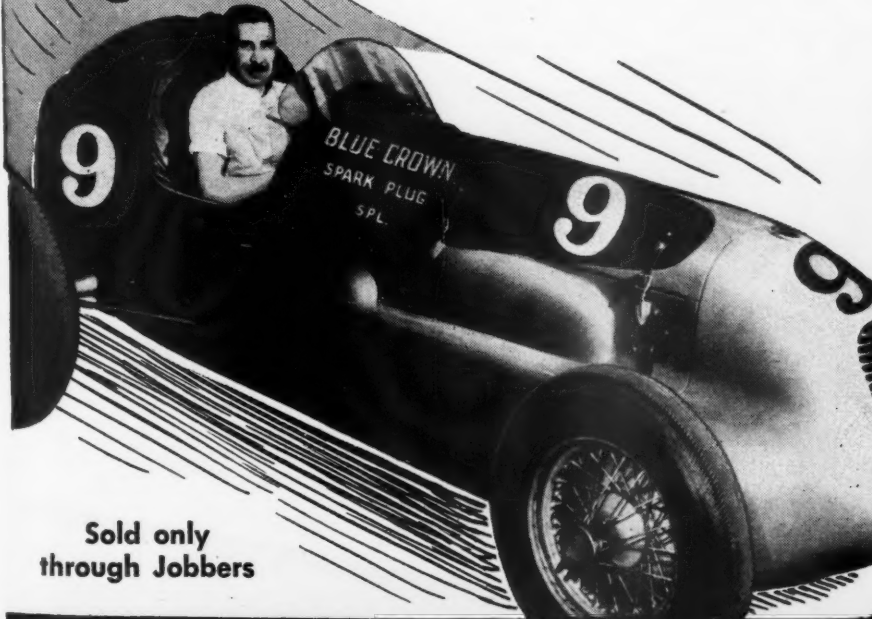


BLUE CROWN HUSKY

SPARK PLUGS do a superb
job for dealers, too



More talking points, more important features, better and longer service — make them sell faster and easier. And the Blue Crown dealer set-up yields a better, fairer profit margin.



Sold only
through Jobbers



DOMESTIC SALES
BLUE CROWN SPARK PLUG CO.
a DIVISION of MOTOR MASTER PRODUCTS CORP.
1800 WINNEMAC AVENUE, CHICAGO 40, ILLINOIS

EXPORT SALES
Borg-Warner International Corp.
CHICAGO 4, ILLINOIS • U.S.A.
Cable Address "BORINTCO"

NEW ETHYL CLEANER



REALLY
CLEANS THE
DIRTIEST RUG!
NOT INFLAMMABLE.

ETHYL CLEANER CARRIES
THE PRESTIGE AND PUBLIC
CONFIDENCE OF THE
FAMOUS ETHYL TRADEMARK!



AND IT
REALLY CUTS
THRU GREASE AND DIRT!
KIND TO YOUR
HANDS, TOO!



Tested in Six Major Markets

For twenty months, New Ethyl Cleaner was sold through retail outlets. The demand was immediate. Users told their friends, assuring large repeat sales. Many enthusiastic dealers praised it to the heavens, saying it was the fastest-selling new cleaner they ever carried. Take a tip from these successful dealers and get your share of this 40% profit business.



Ethyl Cleaner is coming your way

Retail distribution is under way in the following states: New England States, N. Y., Pa., Del., Md., W. Va., Ky., Ohio, Ind., Mich., Ill., Mo., Kan., Neb. Keep in touch with your local jobber or write direct to Ethyl Specialties Corporation, 405 Lexington Ave., New York 17, N. Y. for information regarding advertising and distribution plans in your market.

A P R O D U C T O F
D I S T R I B U T E D B Y

GIVES YOU 40% PROFIT

| | Your Cost (Case Quantities) | Your Fair Trade Selling Price | Your Protected Profit |
|------------------|--------------------------------|----------------------------------|--------------------------|
| 32-oz. bottle | ea. \$0.72 doz. 8.64 | \$1.20 14.40 | \$0.48 5.76 |
| 24-oz. bottle | ea. 0.60 doz. 7.20 | 1.00 12.00 | 0.40 4.80 |
| 16-oz. bottle | ea. 0.45 doz. 5.40 | 0.75 9.00 | 0.30 3.60 |
| 6-oz. bottle | ea. 0.21 doz. 2.52 | 0.35 4.20 | 0.14 1.68 |

These Prices Protected by Fair Trade Agreements

BETTER, FASTER, MILDER THAN SOAP

NEW ETHYL CLEANER is a new synthetic soapless cleaner, originally introduced to clean all parts of automobiles faster and better. But housewives soon discovered it better for all kinds of household cleaning jobs, too. Cleans woodwork, windows, glassware, rugs, upholstery, painted walls and porcelain in a flash. It loosens dirt and whisks it away! No scrubbing! Suds in any kind of water—hot, cold, hard or soft. Not inflammable. No harsh acidic or alkaline properties. Contains nothing to mar sur-

faces or redden the hands. New Ethyl Cleaner is unbelievably quick—yet milder than the mildest baby soap. Stock it with your general-purpose household cleaners.

• CONCENTRATED •

32-oz. bottle makes more than 40 gals.
24-oz. " " " " 30 gals.
16-oz. " " " " 20 gals.
6-oz. " " " " 30 qts.



Powerful Point-of-Sale Advertising

Ethyl Cleaner dealers receive attractive window displays, catchy counter displays, four-color booklets, broadsides, envelope stuffers and newspaper mats to help promote quick over-the-counter sales.



Consumer Advertising that Sells

New Ethyl Cleaner consumer advertising will include heavy schedules of newspaper ads. And on major radio stations, spot announcements will tell housewives about this amazing Ethyl product.

ETHYL CLEANER
WASHED THIS CAR
IN 'A JIFFY!



ETHYL CORPORATION
ETHYL SPECIALTIES CORPORATION

NADA Spurs Dealer Discount Battle

(Continued from page 64)

the industry doubt if more than 60 per cent of normal production can be reached this year under favorable conditions.

The present national business situation is sorely in need of coordinated planning by persons of sufficient scope of economic vision to see the entire production picture. It needs the attention of a group that will formulate a plan fair to all. The leadership for

this plan must be taken by Congress in projecting this task.

Numerous government agencies, including OPA, have demonstrated their inability to get the job done due to the biased methods pursued. Group favoritism is responsible for the failure of these agencies. Administrator Bowles has encouraged increased labor costs throughout the country especially where CIO unions are concerned,

then became horrified at the suggestion that some of the increased costs be passed on to the public, or almost anybody, but the retailer.

During OPA's formative period, there was very little complaint from dealers. With the passing of Administrators Leon Henderson and Prentiss Brown, great changes in the personnel and interpretation of OPA's duties and power came. An exodus of trained automobile men from the organization took place. The last men with any extended retail experience, Jo Roberts, and Clark Moody have left several months ago. In their places to handle the most intricate dealer problems, frequently involving possible losses of hundreds of million dollars and grave service disturbances, came men who knew absolutely nothing about the retail motor car business.

The most noticeable change in OPA policy, however, has been in its attitude toward consulting the advisory committee and using section 2(h) of the law as a means of enforcing severe cost absorptions. In the beginning, OPA officials invited 81 dealers from all parts of the country to come here at intervals and at their own expense to advise the agency. With the advent of Mr. Bowles, the situation changed. The advisory committee usually was not consulted on any major subject, but was simply called in and told what OPA had decided to do with the dealers.

NADA asks that Congress come to the realers' relief through the following suggested steps:

All cuts heretofore taken from dealers should be cancelled so that they may quickly help restore their service to normal.

OPA's issuance of arbitrary rulings without consulting the industry committee should be prohibited.

All price controls on various lines of goods automatically should cease, without the necessity of obtaining OPA consent, when the advisory committee of the affected lines certifies with evidence that certain percentages of normal production have been reached.

Congress must take steps to see that OPA and other government agencies do not use their power, granted or assumed, to favor one segment of the nation's economy at the expense of another. Under present OPA regulations and policy increasing interferences will occur with the distribution of new cars to the public as they come on the market and dealers will be harassed by conflicting regulations until they are financially crippled and exhausted. Congress must act now.

A new type truck tire with special tread design to meet needs of vehicles that operate both on and off the highways, has been put into production by Goodyear.

A VELVET LIKE FINISH IS PRODUCED WITH A FEATHER LIKE TOOL



CORRECT BALANCE CORRECT WEIGHT CORRECT DESIGN CORRECT SPEED

Thirty years manufacturing experience has made it possible for K-O Engineers to give you these four all-important features in a Valve Seat Grinder. These four determining factors are what an experienced mechanic looks for in a Valve Seat Grinder. They're all found in a Knock-Out Grinder.

It doesn't take a master mechanic to produce a velvet-like finish on valve seats. A mechanic with little experience can do it with ease and accuracy when using a K-O Grinder and K-O Stones.

"Knock-Out" UTILITY VALVE SEAT GRINDERS

are conveniently packed in a handy Tool Chest. This tool will prove to be one of the most worth while and most profitable in any shop. Not only is it built to grind valve seats but also for:

Carbon removing Abrasive disc grinding
Tool post grinding Misc. hand grinding

and for many other frequent and worth while grinding jobs around a shop.

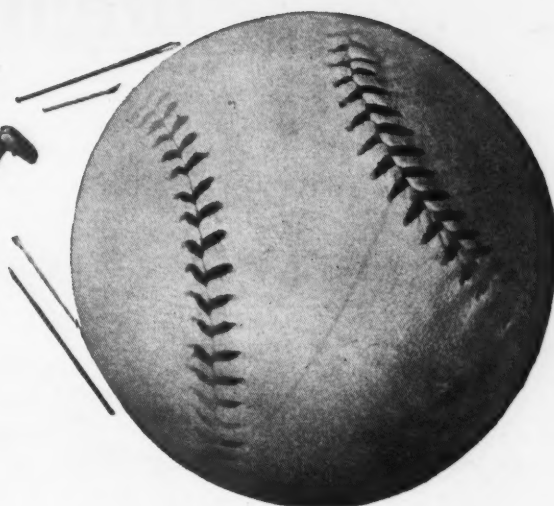


MODEL P302 UTILITY VALVE SEAT GRINDER

SEE YOUR "K-O" JOBBER OR WRITE TO
K.O. LEE COMPANY, ABERDEEN, S. D.

Manufacturers of Fine Tools for Over Thirty Years

**FAR IN
HOW FAST IS A SECOND?**



Big League Pitchers deliver a baseball at a speed rate of 190 feet in one second.

When the speedometer on your car or truck reads 50 — you are traveling 75 feet per second . . .

...that's why *Feather Touch* *Stopability* is important

Yes, energy in motion on improved roads, and in city traffic has given emphasis to the need for a margin of extra stopability and smooth, feather-touch brake action through Power Braking.

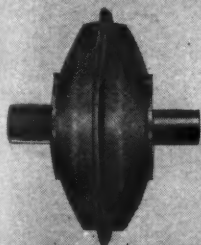
Vacdraulic—added to any good hydraulic brake system, steps up the pressure exerted at the brake drums and enables

the school girl or truck driver to have equally controlled, safe brake action.

Vacdraulic feather-touch Power Braking is being specified on "new fleet" orders—and can be a "plus" as well as "extra safety" feature on many new car sales.

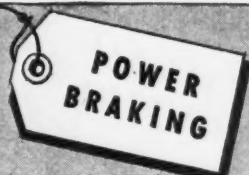
Vacdraulic is easy to install and its power braking is accomplished without action lag, rods or links to get out of adjustments.

See your Vacdraulic Distributor or write us for details.



Write for the complete Vacdraulic catalog of engineering and installation details today.

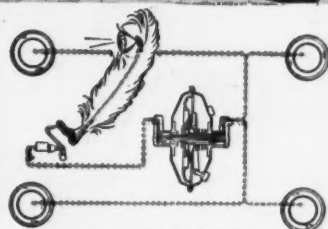
VACDRAULIC



KELSEY-HAYES WHEEL CO.
Detroit 32, Mich.

Sold to Automotive Distributors by
EMPIRE ELECTRIC BRAKE CO.
Newark 7, N. J.

VACDRAULIC is a Trade Mark of
Empire Electric Brake Company



You might as well make

Moosa Garage

DODGE-PLYMOUTH



Petroleum
Products

"33 Years Successful Operation"
WILSON J. MOOSA, Manager

Phone 1-J
EUNICE, LOUISIANA

Aug. 29, 1945

Mr. L. A. McQueen, Vice Pres.
The General Tire & Rubber Co.
Akron, Ohio.

Dear Mr. McQueen:

We have handled General tire since 1936 and our record will show that 80% of our purchases have been your Dual "10" and Dual "8" tires. We can say without a doubt that 75% of all new cars sold were changed over to one of the two above premium brands. Our profit on above cars after the changeover averaged about \$62.50 per car and we always figured that we rendered our customer a real service for safety and trouble free miles to add to his enjoyment of the new car.

Plus the above profit angle we have always felt secure with the General franchise for the reason we knew that we had no worry that any one else in Eunice, La., could sell General tires but us. We can gladly recommend the General franchise as the one outstanding franchise for any car dealer who wants to make additional profit on new car sales.

Yours very truly,

MOOSA GARAGE

BY *Wilson J. Moosa*
Wilson J. Moosa, Mgr.



all the profit there is . . .

In addition to new car profit . . . Wilson J. Moosa
made \$62.50 extra on 75% of all the new cars he sold!



● His letter, on the opposite page, is just one of hundreds from General franchised Car Dealers whose own testimony *proves* that the General Tire Change-over Plan will:

- Pay all your overhead . . . without increasing it!
- Readily become a standard part of your new car deal!
- Add extra-profit to from 25% to 80% of your new car sales.
- Produce extra-sales not attainable with any other tire!

Only Top-Quality General Tires answer your new car buyers' demand for *proved* extra performance . . . extra mileage . . . ultra-smart appearance. That's why the General has always attracted new car buyers to "*change-over to Generals*" and *pay more* to get more!

AND NOW . . . the *new* General Tire . . . the greatest tire ever built . . . is coming soon!

The General Tire Car Dealer Plan offers you an exclusive agency for the *recognized* tire leader . . . unchallenged by any equipment tire or "unknown specialty brand." Your customers are pre-sold on the Top-Quality General . . . this proved plan has always produced 33⅓% profit or more for car dealers. Write today for complete details.

THE GENERAL TIRE & RUBBER CO. • AKRON, OHIO

. . . goes a long way to make friends

Chatter About a Clutch

(Continued from page 24)

"Such as what?"

"Well, there's two overhauls. And a rear end job on a truck. And just this morning we got one that looks like it'll need a new clutch."

"Looks like it?" Pop echoed crisply. "Don't nobody around here ever take the trouble to find out?"

"Larry says that's the way he diagnoses it, but it only came in this morning. We haven't had a chance to get

on it," Tommy told Pop.

Pop opened an impressive-looking envelope, found the enclosure to be nothing more important than a political organization's plea for funds, and tore it up. "I'll take a gander at that clutch job," he announced.

As they walked across the shop floor, Pop asked: "Which one is it?" "That '38 Ford over there."

"Not that green coupé?"

"That's the one," said Tommy.

"Ain't that the job Ellis Carney, the druggist, has for his delivery boy?"

"I guess it's his," Tommy surmised. "He brought it in. Larry talked with him."

Pop grunted and called Larry Tate.

"What's the story on this clutch job?" he asked pointedly when Larry loafed over to the coupé.

"Needs new facin's," said Larry, "or maybe a whole new assembly. I don't know. I ain't had a chance to look at it. And the way things is goin' I don't know when I will."

"Can you stop gripin' long enough to tell why you think it's the clutch?"

"Sure," said Larry. "I ain't got nothin' else to do but shoot the breeze. I only got four jobs to get out today."

Pop ignored Larry's heavy sarcasm. "What did Ellis Carney say about how it acted?" he asked quickly.

"Said it chattered bad in reverse."

"Did you test it?"

"Ellis has been drivin' long enough to know a chatterin' clutch when he hears one," said Larry.

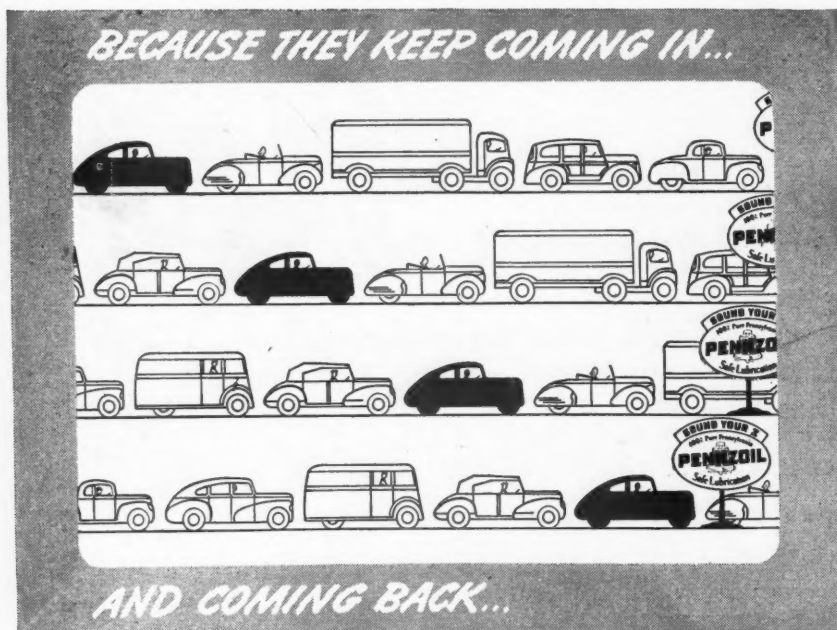
"Okay," said Pop. "But we might be able to let a man or two go, now that we're lettin' customers diagnose their own troubles."

Larry glared a moment, then strode off. Tommy, who always felt uncomfortable when Pop and Larry were tossing verbal darts at each other, glanced first at Larry's retreating form, then at Pop. The latter shook his head and started to pace back and forth alongside the car.

"There's somethin' fishy about this job," he muttered. "Ellis always gets his repair work done by his brother-in-law over in Boydstown. I'll bet six box tops to one reasonable facsimile thereof that his brother-in-law had a crack at this job first." He stopped beside the door of the car, and tugged at the lobe of an ear.

"Don't you think it's the clutch?" asked Tommy.

(Continued on page 74)



...this PENNZOIL proposition gets more profitable every day!

When you realize that month after month Pennzoil advertising sends over 22,000,000 messages into the nations homes...

When you know that Pennzoil quality performance keeps customers satisfied and coming back...

And when you see that the Pennzoil customer is your best bet for all your merchandise and services...

It's easy to see why you make more money with Pennzoil—make more and more, day after day!

With Pennzoil reaching new heights in popularity and acceptance, it's easier than ever to sell Pennzoil... and more profitable.

Get the facts from your Pennzoil distributor... or write to us for his name.

Sound your "Z"
PENNZOIL



THE PENNZOIL COMPANY • Executive Offices • OIL CITY, PA.

*Registered trade-mark

Member Penn Grade Crude Oil Ass'n., Permit No. 2

PENNZOIL* MOTOR OIL & LUBRICANTS



OFF with the GRIME! ON with the SHINE!

MORE Profits

when you **CLEAN-POLISH in ONE OPERATION!**

**MORE Reason
for Waiting for
Black & Decker
Power-Buffers!**

Black & Decker Portable Electric Power-Buffers boost cleaning and polishing sales and profits by turning out better work . . . on more cars each day . . . with minimum muscle and manpower. Exceptionally heavy demand for that kind of performance still keeps the supply of these Buffers scarce . . . but it makes sense to wait a little longer for a tool that has so much to offer!

With Power Glaze* Liquid, these Power-Buffers clean, polish and seal car surfaces in ONE operation . . . removing grime and traffic film . . . producing a hard, durable surface. What's more, they're ideal for obtaining final high lustre after spraying—and for rubbing "orange peel" in lacquer finish. Two popular models: Automatic Power-Buffer (illustrated) feeds polish from built-in reservoir, eliminates need for hand polish application; Standard Power-Buffer, without the automatic feed and reservoir.

For additional information . . . and a complete line of accessories for Buffers and other automotive portable electric tools . . . contact your nearby Black & Decker Distributor. For our complete catalog, write to: The Black & Decker Mfg. Co., 627 Penna. Ave., Towson 4, Md.



LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker
PORTABLE ELECTRIC TOOLS

*Trade-Mark Reg. U.S. Pat. Off.

Chatter About a Clutch

(Continued from page 72)

"Could be. But I'm a suspicious old so-and-so. If it was the clutch, Ellis' brother-in-law would have spotted it. In fact, he couldn't hardly miss it."

"What else could it be?"

"I'm only thinkin' out loud," said Pop. "But I remember workin' on a Ford once that—" He broke off suddenly and reached for the door handle of the coupé. "I'll tell you what," he said, quickly opening the door.

"Jerk the floor boards and take off the pan over the transmission."

"Transmission?" Tommy queried.

"Yeah. And let me know when you're finished."

While Tommy was carrying out Pop's instructions, Larry strolled over. "What kind of a brainstorm has the old man got now?" he asked.

"He told me to take the pan off over the transmission," said Tommy.

"Transmission!" mocked Larry. "If that trouble ain't in the clutch, I'll buy you both a lunch."

A few minutes later Tommy burst into the shop office and startled Pop by exclaiming, "Pop, I found it!"

"Found what?" asked Pop, laying aside the shop orders he had been sorting.

"The trouble with that coupé," Tommy explained. "The righthand stay rod came loose somehow."

Pop grinned and got to his feet. "If I only had hunches like that when I got to the race track," he said. "Well, let's see what we can do about it."

When they reached the car, Pop poked his head inside the door. Tommy could hear him rattling the loose stay rod. Presently he withdrew and straightened up stiffly.

"Yeah," he announced, "that's it all right. The stay rod pulled a chunk right outa the diagonal frame brace."

"Gee," gasped Tommy. "I didn't think that could happen."

"It's easy enough. The engine rear mountin' worked loose and dropped out."

"But—" began Tommy.

"You've seen 'em. They're rubber biscuits. When a car gets as old as this one, the rubber's apt to dry out and crack. Then the biscuit falls out. That lets the engine jump around and the vibration pulls the stay rod loose."

"I guess we'll have to put in a new stay rod," said Tommy.

"No—new engine rear mountin's. We can weld the rod back in place. It won't take long."

"That's good. Larry's going to buy us a lunch."

"That's a good one, too. I've knowed Larry a long time but I ain't never knowed him to do no buyin'."

"He said if the trouble with this

(Continued on page 76)

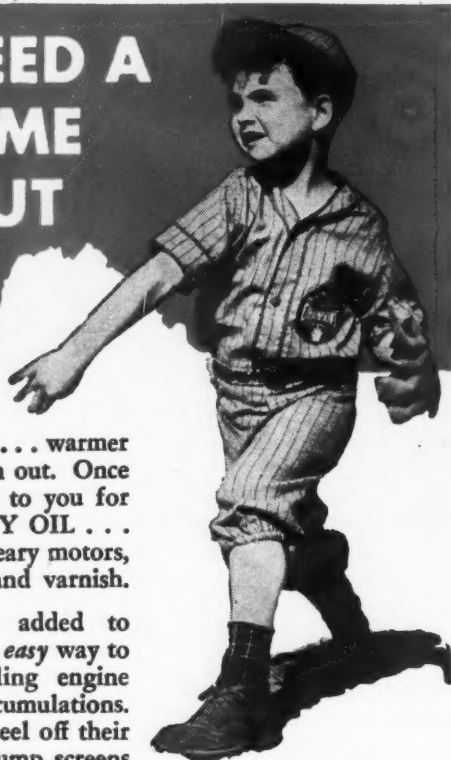
MOTORS NEED A SPRINGTIME WORKOUT TOO!

Winter driving leaves a motor full of mechanical charleyhorses . . . warmer weather, alone, won't work them out. Once again, your customers will look to you for dependable MARVEL MYSTERY OIL . . . it loosens stiff joints in winter-weary motors, gets rid of deep-rooted sludge and varnish.

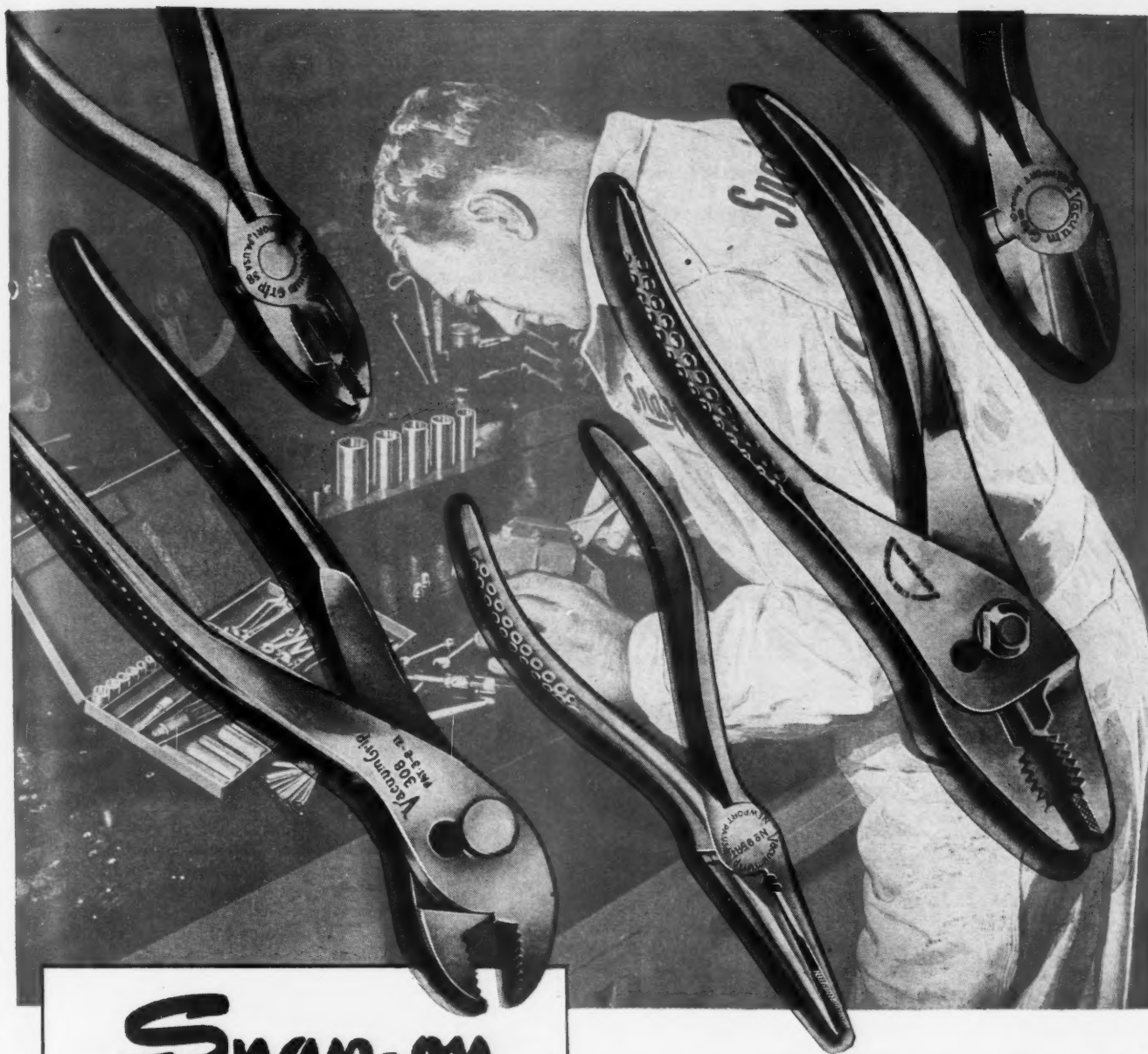
MARVEL MYSTERY OIL, added to crankcase oil and gasoline, is the *easy* way to *thoroughly* dissolve power-stealing engine gums. It also retards further accumulations. Lazy rings and sluggish valves peel off their sticky coats . . . oil lines and pump screens benefit instantly. The vital flow of protecting lubricant is properly restored. Immediately, motor wear goes down while performance picks right up.

The active demand for this famous oil and gasoline additive assures you of big league profits the year 'round . . . get set for the heavy Spring demand . . . order from your jobber NOW! EMEROL MANUFACTURING CO., Inc., 242 West 69th Street, New York 23, N. Y.

MARVEL MYSTERY OIL



"To hell with portaging—my feet hurt!"



Snap-on

Vacuum Grip Pliers

REG. U. S. PAT. OFF.

A complete line . . . engineered for performance

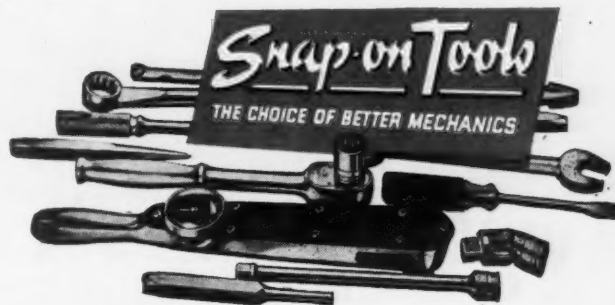
Pliers are basic tools in an extremely wide and varied range of operations. The *right pliers for the job* can make a tremendous difference in speed and workmanship. The Snap-on pliers illustrated are typical of the many types of Vacuum Grip pliers . . . each type *job-engineered* for peak performance on the work for which it is designed.

Snap-on builds Vacuum Grip pliers in a modern plant devoted exclusively to the production of the finest, most efficient pliers that can be produced. Vacuum Grip pliers are hammer forged from special high car-

bon chrome-silico-manganese alloy tool steel, hardened and tempered through and through. Light in weight, perfectly balanced. Smooth, easy riding joints, sharp, deeply milled teeth. Hand filed, perfectly aligned cutters. Spring-tempered, "Vacuum Grip", non-slip handles.

A famed name in Snap-on's complete line of more than 3,000 tools for production and service, Vacuum Grip pliers are available everywhere through Snap-on's nation-wide direct-to-user tool service.

SNAP-ON TOOLS CORPORATION
8036-D 28th AVENUE KENOSHA, WISCONSIN



Appointed to Atlanta Division of Ethyl

Stonewall Jackson Warner, Jr., who recently returned to his work with Ethyl Corp., after several years of service as a petroleum officer with the Quartermaster Corps in Europe with the rank of lieutenant colonel, has been appointed assistant manager of the Atlanta division of the corporation, President Earle W. Webb has announced.

Recipient of the Bronze Star, the Croix de Guerre, and the Member of the British Empire Decoration for

his services in connection with the operation of the "biggest filling station in the world" prior to and during the invasion of the European continent, Jack Warner spent three years in the European Theatre of Operations. As POL officer, he set up field storage depots for petroleum products, first in England, then in France, and supervised the fueling of U. S. Army ground and air units in their final sweep across France into Germany. In connection with this work he was responsible for the design and construction of 14 huge storage depots, built up in England, where fuel supplies for the invasion were assembled.

Chatter About

(Continued from page 74)

Ford wasn't in the clutch he'd take us both to lunch."

Pop chuckled. "This day's gonna turn out all right after all. Ill get a kick outa watchin' his face when he reads the check."

"You won't be too hard on him?" Tommy laughed.

"I'll say I will. Maybe it'll learn him to think twice before he opens that yap of his. You know there's an old Chinese sayin': 'No matter how big a man's foot is, he can always get it in his mouth if he only talks enough'."

New Condensed Catalog Issued by Imperial

Complete data on flexible fuel lines, brass fittings, fuel strainers, dash controls, flaring tools, and tube cutters are included in the new Imperial No. 22-B Condensed Automotive Catalog just issued by The Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago 7, Ill.

The catalog shows some 1700 service parts and tools. The latest Imperial fuel line and fitting merchandisers are described.

Other items included are: Oil filter lines, flexible fuel hose and attachable fittings, shut-off valves, drain cocks, barrel faucets, radiator faucets, spring oilers, engine cleaners, freeze-testers, battery hydrometers, soldering equipment and welding equipment. Copies are available from the manufacturer.

Elected President of American Chain & Cable

American Chain & Cable Co., Inc., of Bridgeport, Conn., announces that Wilmot F. Wheeler has been elected president, succeeding the late William T. Morris. Mr. Wheeler has been with the Company since 1916, was elected a director in 1919 and treasurer in 1920. He has been executive vice president and treasurer since 1936.

New Appointment

J. D. Thompson, formerly zone manager at Louisville, Ky., for the Chevrolet Motor Division of General Motors Corp., has been transferred to Charlotte, N. C., in the same capacity, according to T. H. Keating, Chevrolet general sales manager.

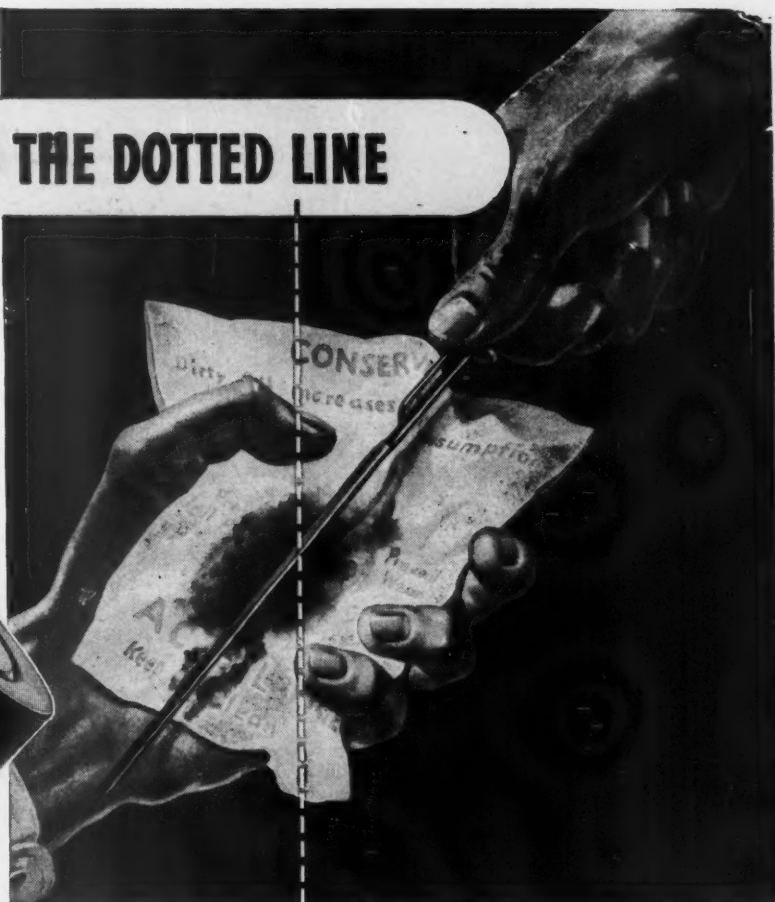
Thompson joined Chevrolet originally in Louisville, in 1923, as a sales representative. He has served in Knoxville, Indianapolis, Charleston, S. C., and Jacksonville, Fla. At Charlotte he succeeds H. P. Sattler, recently appointed zone manager in Detroit.

LION
AUTO PARTS

LINE UP WITH LION

LION AUTO PARTS & MFG. CO.
1920 SO. MICHIGAN AVE. CHICAGO 16, ILL.

THE SHORTEST PATH TO THE DOTTED LINE



USE AC OIL TEST PADS

When you wipe the dipstick on an AC Oil Test Pad, your customer watches with interest. You show him the smear—and if it contains grit, dirt or gummy oil, he needs an oil filter or element.

Tell him why: Dirty oil clogs rings and slots—makes valves stick—robs engines of power—wastes fuel and oil—runs up repair bills.

Be sure to use AC Oil Test Pads whenever you check engine oil. They're the best oil filter salesman you can get—and they cost you nothing. You use them instead of a rag, for wiping the dipstick, giving every customer a quick, accurate oil test.

If you are not already an official AC Oil Filter Service Station, your jobber will be glad to register you and help you tie in with AC national advertising. He will also tell you how to order a supply of these FREE AC Oil Test Pads—and an ample stock of AC Oil Filters and Elements to fill increased orders.



BUY AC FOR UTMOST RELIABILITY

SEND FOR AC SHOP MANUALS

Field Service Dept., AC Spark Plug Division, G. M. Corp. MA-4
910 Mott Foundation Building, Flint 3, Michigan

Gentlemen: Please send at once, no charge, the AC Shop

Manuals checked:

- | | |
|--|--|
| <input type="checkbox"/> How to Service Spark Plugs | <input type="checkbox"/> How to Service Fuel Pumps |
| <input type="checkbox"/> How to Service Spark Plug Cleaner | <input type="checkbox"/> How to Service Air Cleaners |
| <input type="checkbox"/> HOW TO SERVICE OIL FILTERS | <input type="checkbox"/> How to Service Speedometers |
| <input type="checkbox"/> How to Service Ammeters and other Instruments | |

NAME _____

FIRM _____

STREET ADDRESS _____

CITY _____

STATE _____



*There's a deal
that fits your
Business*

Auto-Lite offers a variety of money-making deals custom made to fit your type and size of business. For most car dealers there are selections of electrical and ignition parts for the make of car you sell. For garages and the "Super" type of service stations,



AUTO-LITE ON THE AIR—Dick Haymes, Helen Forrest, Gordon Jenkins' Orchestra—every Saturday night, 8:00 P.M.—E.S.T. on CBS

AUTO-LITE



Thomas Jefferson

said it

"A man who qualifies himself well for his calling, never fails of employment."

IT'S STILL TRUE...GIVING HONEST WORKMANSHIP AND FURNISHING ORIGINAL FACTORY PARTS BUILDS BUSINESS

Today, there are over 8½ million cars on the road for which Auto-Lite parts are specified as standard equipment. These cars represent a ready-made market for every Auto-Lite service outlet. Car dealers, garage operators

and service station owners who are interested in, and can qualify for, an Auto-Lite Parts and Service Franchise should get full information from the nearest Auto-Lite Central Distributor, or by writing directly to Auto-Lite.

there are general assortments including one made up of fast moving items only. All of these selections are cross indexed for quick reference — every one designed to build your sales and profits. For complete information about the Auto-Lite deals, write to

THE ELECTRIC AUTO-LITE COMPANY

Parts and Service Division

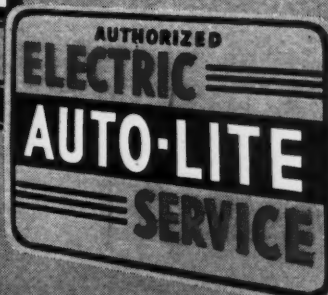
SARNIA, ONTARIO

TOLEDO 1, OHIO



This sign identifies an authorized Auto-Lite Service Station — files in with Auto-Lite's great radio show and Classified Telephone Directory listings.

← This sign identifies the seller of original factory parts.



✓ Starting ✓ Lighting ✓ Ignition

Denver Dealers Have Buying Group

(Continued from page 26)

Profits of the corporation will be divided among the dealer-stockholders in proportion to their investments in the business, these profits will be in addition to those the dealers make on the sales of accessories.

Officers and directors of Auto Dealers, Inc., are all old, well-established Denver automobile dealers. Lester C. Thomas, president of the corporation, is with the Thomas-Hickerson Motor Co. Harry B. Leeman, president of

the Leeman Auto Co., who won national acclaim recently through aiding a blinded veteran buy a tract of land he had long dreamed of owning, is vice president.

Secretary-treasurer is Sam Marcus, president of Marcus Motors, while Henry Davidson, president of Metropolitan Pontiac and Lou Luby, president of the Luby Motor Co., are the directors.

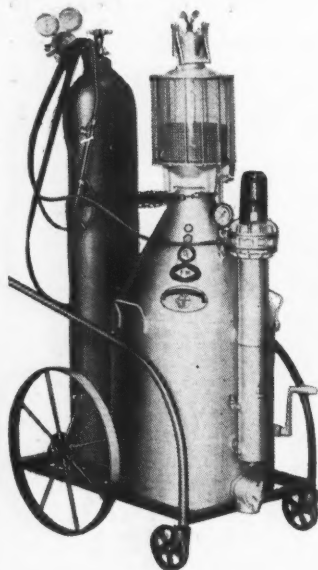
General manager, Edgar H. Rust,

has also been in the automobile business for many years. He was Lt. Commander in the Navy during the war, and was a naval aviator in the first World War. Rust feels that the organization will save dealers time as well as money in that they do not have to interview a host of salesmen every day. It is his belief that it will be a definite help to accessory distributors, too, because they will have just one stop to make to sell more than thirty dealers. Some distributors took a pessimistic viewpoint, but Rust feels that they will soon realize the benefits of the organization.

A twist of the wrist...

CAN SAVE YOU 50% TO 75%

ON ACETYLENE COSTS



25-P "SIGHT FEED"

Portable Acetylene Generator Unit

● A SIGHT FEED Acetylene Generator is so simple to operate, so easy to maintain, that it takes only a "twist of the wrist" to start saving money on acetylene.

With a SIGHT FEED you don't need to worry whether you will have enough acetylene to carry you through the job—you see the carbide charge in the hopper and you know you have enough before you start.

Contact your jobber or write—



THE SIGHT FEED GENERATOR COMPANY

RICHMOND, INDIANA

Named Works Manager



Appointment of Melville D. Johnson as Works Manager is announced by Ralph R. Layte, president, Purolator Products, Inc., Newark, N. J., manufacturer of oil filters.

Johnson comes to Purolator from Graham-Paige Motors Corp., where he held the position of quality manager and also served on the staff of the director of manufacturing. Prior to joining Graham-Paige, he was with Caterpillar Tractor Co. for 16 years, serving last as chief inspector of the Peoria plants.

New Grey-Rock Decal Promotes Brake Importance

Now ready for display in both wholesale and retail outlets, a colorful new decalcomania dramatically stresses the importance of brakes in road safety. Produced by United States Asbestos Division, makers of Grey-Rock Balanced Brake Lining, this decalcomania asks "Are Your Brakes As Old As Your Car?" . . . the same arresting question that appears in Grey-Rock's national advertising in *The Saturday Evening Post*, *Collier's*, *Country Gentleman*, and *Holiday*.

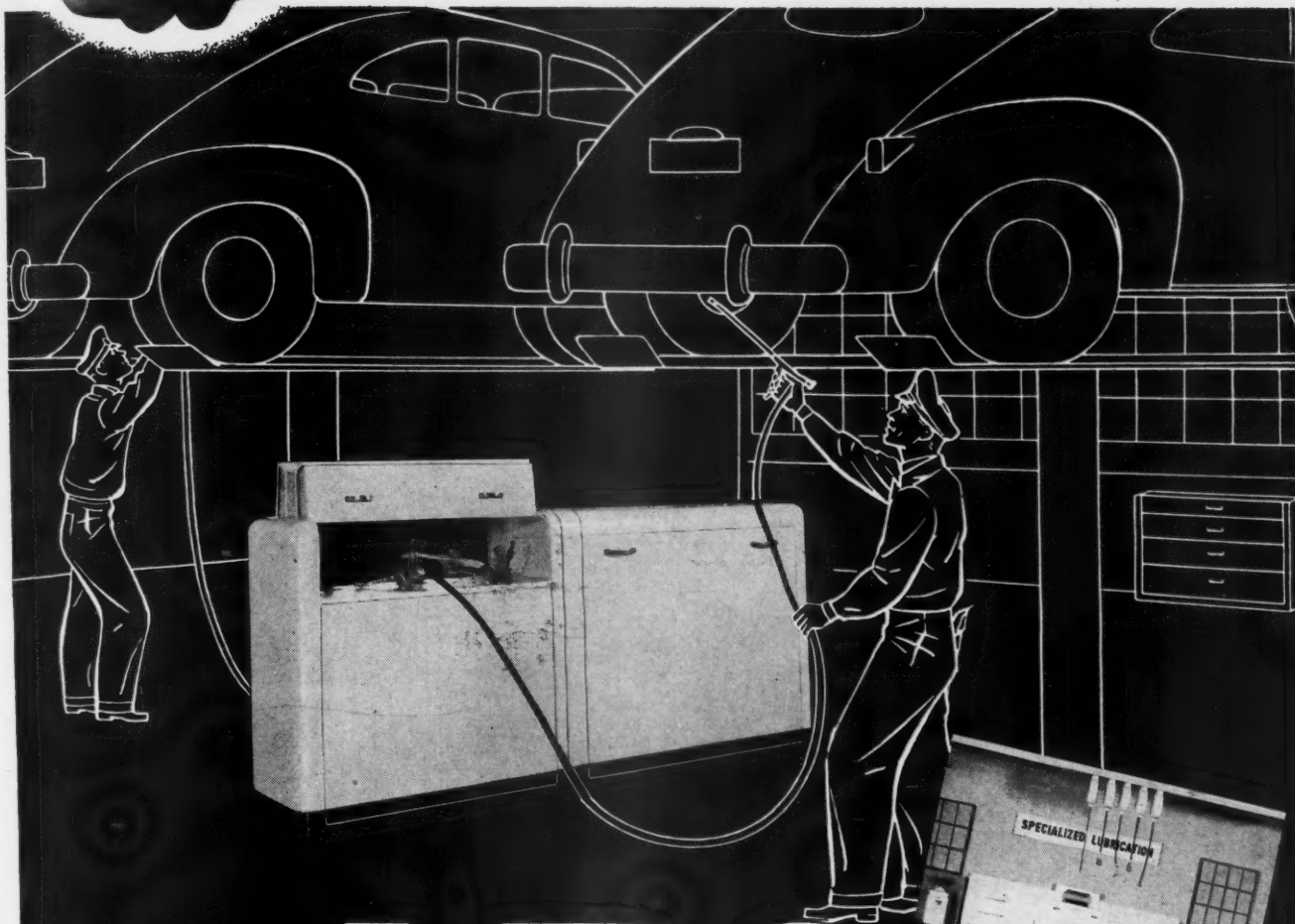
Distribution of the decalcomania is timed to accord with the Police Chiefs' vigorous 1946 campaign . . . the TRAFFIC SAFETY CHECK beginning May 15. This year again, brakes receive the greatest emphasis in the Police Chiefs' campaign. A substantial increase in brake relining jobs is expected throughout the country.

Rejoins Du Pont Division

E. Hearn Simpson has rejoined the staff of the Petroleum Chemicals Division as sales manager of the Alcohol and Camphor Section and manager of "Five Star" Anti-freeze sales after more than three years in the Navy, it was announced by the Du Pont Company.



NEW TIME-SAVER BOOSTS YOUR PROFIT!



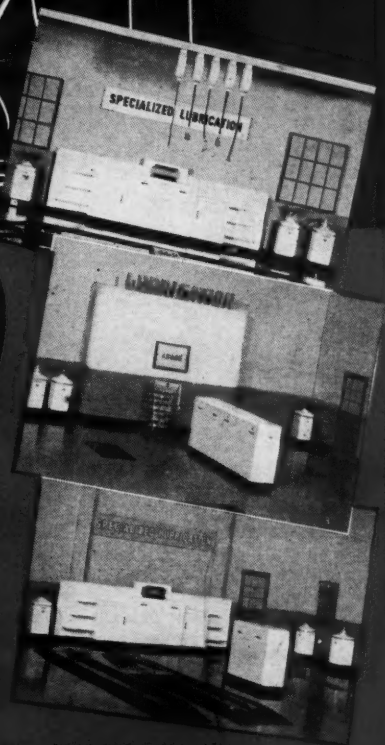
NEW ARO

CENTER ISLAND LUBRICATION UNITS

Here's the ideal "work unit" for modern lubrication departments! Beautifully styled new ARO Center Island Lubrication Units *save time and steps and increase your profit!*

Amazingly compact . . . these units serve two lifts with all hose in easy reach. Extremely low installation cost. Unit illustrated has 3 lubricant pumps and 5 automatic reels, including two for chassis, two for gear and one for air. Available with any combination of reels for chassis, gear, motor oil, air and water. Automatic stops—automatic rewind. Cabinet conceals all hose and reels when not in use.

Ahead in Performance, Quality and Dependability . . . because it's ARO-engineered! See your ARO Jobber or write The Aro Equipment Corporation, Bryan, Ohio.



The *right* lube layout makes a big difference in lube profits! Let Aro help you with new layout suggestions showing efficient use of overhead reels, center island reel cabinets and centralized lubricating units.

Clearing House

(Continued from page 60)

it won't start again until I remove the vapor dome. The car does not run hot. The timing is O.K.

Any help you can give me on this will be very much appreciated.—Rohlin Sullender, P. O. Box 244, Pyote, Texas.

IN regard to the vapor lock you are experiencing on the 1938 Imperial Chrysler, this can be assisted materi-

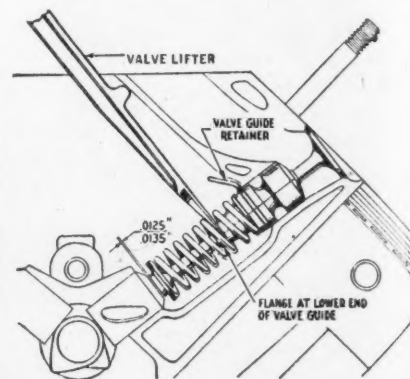
ally by the installation of thick insulating gaskets placed between the carburetor, and the manifold and also between the fuel pump and the engine block. I would also recommend that you switch to a different brand of gasoline for to the best of my knowledge this particular car was not prone to vapor lock, and I am inclined to believe that you have been getting some poor quality fuel.

Loud Tappet Noise

We ground the valves in a 1940 Mercury and find that it has very loud tappet noise. The clearance we set at .011 in. The car runs O.K. but the owner complains about the noise.

Can you tell us what we can do to quiet those valves?—T. P. Trojanowski, 10 Union St., Dundee, New York.

I AM very much interested in the trouble you are experiencing with the 1940 Mercury. After carefully



considering your letter, I am of the belief that you have slipped up in measuring the clearance on these valve tappets. There is also a possibility that you did not get the valve spring keepers in place. I would suggest that you move the intake manifold once more, check the valve spring keepers and also the valve tappet clearance.

If it develops that the clearance is excessive, you can either install new valves, or cut the seats in the block deeper.

Slides Out of Gear

I have a 1937 Cord automobile which slides out of gear after it is in whichever gear I shift in. Is this transmission or electrical vacuum shift troubles? Do you have several procedure and exploded views of Cord front end (transmission, axle, (Continued on page 84)



\$175⁰⁰ SLIGHTLY
HIGHER IN FAR WEST

**MODEL
E-136**

SCIENTIFIC DISTRIBUTOR TESTING - Most Profitable End of Motor Tune-up

75%

OF ALL CARS NEED
**SYNCHROGRAPH
SERVICE**

**Here's a Proved Way
to Increase Shop Income**

No other unit on an automobile is so vital to top-notch car performance as the distributor — nor is any single unit as likely to cause "trouble."

With an Allen Syncrograph you can check every distributor part and function — do it quickly and with PRECISION accuracy. Then, after the adjustment or repair is made, you can check again to make sure the work has been done RIGHT.

Many thousands of Syncrographs are now in service — increasing shop incomes from \$100 to \$350 per month. See your nearest Allen jobber for complete information on this big money-maker, or write us at Kalamazoo.

ALLEN ALSO MAKES

1. Gauges — (Compression and Vacuum)
2. Growlers — (Armature)
3. Battery Chargers — (Fast and Wall Types)
4. Test Stands — Generator, Starter and Magneto
5. Tune-up Testers — (Coil, Condenser, Volt-Amp., Tachometer, Contact Angle, and Combustion Analyzer)
6. Timing Lights and Coil Testers
7. Puller Presses and Radiator Test Plugs
8. Undercutters and Magnetizers
9. Welders — (Arc and Spot)

ALLEN Equipment

ALLEN ELECTRIC & EQUIPMENT CO.
KALAMAZOO, MICH.

Sell Radiator Service

DISPLAY THIS POSTER

● Ask your jobber how to get this big Du Pont poster and other displays to help you sell radiator service. There's big money in this business now!

**AUTO RADIATORS
NEED ATTENTION NOW**

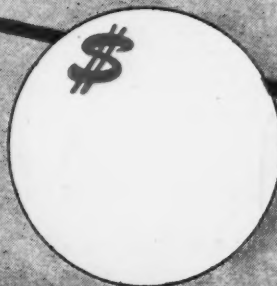
1 We clean out RUST & SCALE

2 We make them RUST-PROOF

3 We make them LEAK-PROOF

with
Du Pont Radiator Chemicals

SPECIAL PRICE
for the complete job



DU PONT

REG. U. S. PAT. OFF.

NO. 7 LINE

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Clearing House

(Continued from page 82)

universal, etc.), and its electrical vacuum shift unit?—Frank Sudore, 125 Yates St., Rochester 9, N. Y.

It is quite possible that the trouble you are experiencing might be caused by either trouble with the shifting mechanism or worn transmission gears. Because so few of these cars were built, there is very little information available, but I would

suggest that you first carefully check the shifting mechanism and then after that is working perfectly, I would check the transmission gears for wear.

The factory never released any instructions on the electrical shifting mechanism, but I would suggest that you first disconnect the controls. Shift the transmission into first speed by hand, and then connect the first speed control lever to the transmis-

sion. Proceed in this way with the other speeds, making sure that the electrical mechanism fully engages the transmission gears each speed.

If, after adjusting the shifting mechanism, your trouble continues, the difficulty is probably in worn transmission gears, or bearings which will have to be replaced.

Trouble with Points

I have had trouble with points. After they have been in the car a few thousand miles they become blued and the car starts very hard. If I put in a new set of points, it starts perfect. Could you tell me what is causing this? — W. W. Morrums, Brookfield Garage, Brookfield, N. Y.

In regard to the trouble you are experiencing with burned ignition points, I think you will find the trouble caused by defective ignition condensers, and also possibly by the generator voltage-being set too high.

I would suggest you check both of these points in an effort to overcome your trouble.

Engine Runs Hot

I have a 1936 Pontiac, six cylinder, which takes spells of running hot. The radiator has been taken off and cleaned. The timing has been checked, and the car completely overhauled. Valves have been checked several times. There is no thermostat in it and the water pumps have been checked three times, but this auto did this before it was overhauled.—Charles L. Barnes, Barney's Garage, Cheraw, Colo.

With reference to the trouble you are experiencing with a 1936 Pontiac I would like to point out that in spite of the fact you have cleaned out the radiator, it is still possible that that is the cause of your trouble. The reason for this is that it is very difficult to do a thorough job on clean-

(Continued on page 86)



KEEP ASKING

May we
CHECK
your
Brakes

GATKE DURA-BLOK
GROOVED
BRAKE LINING
SET
PAT. PEND.

To win business and make friends remind car owners that brakes "go bad gradually" and reline with GATKE CUSTOM-BILT Brake Lining.

Checking brakes shows interest in the Safety of the car owner—and yields a high return in brake service work.

GATKE Brake Lining gives you better relines quicker—assures your

profit and gives your customers extra performance value, thereby making friends and building good will for your business.

Ask your GATKE Jobber about GATKE Extra Value for All Three and about the GATKE System of Personalized Advertising* which is furnished free to Service Organizations that use GATKE Brake Lining.

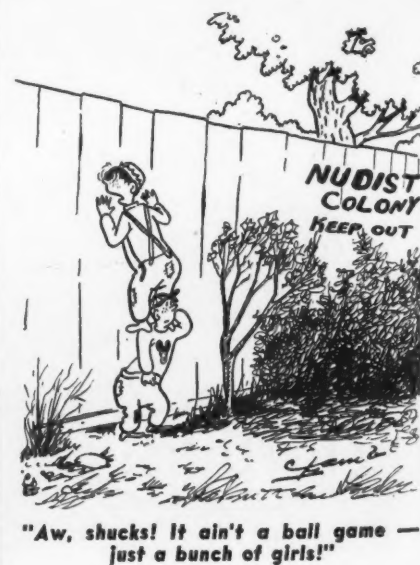


Gatke
CUSTOM-BILT

BRAKE LININGS

BLOCKS SETS ROLLS SHEETS

GATKE CORPORATION
228 N. La Salle St., Chicago 1, Ill.



The **FACTS** about **NUGGETS**



**What Nuggets
DO**

**What Nuggets
ARE**

**When you can
get Nuggets**

Nuggets' ONE DOUBLE-DUTY DRIVE does all the work that formerly required both $\frac{3}{8}$ " and $\frac{1}{2}$ " drive wrenches. Thus NUGGETS save you money on both original cost and replacements by eliminating duplication of handle types, socket sizes and attachments.

NUGGETS are exclusive Blackhawk Socket Wrenches made of HEXITE, the super-strength steel that permits ONE DOUBLE-DUTY DRIVE. Compared to wrenches in other steel alloys, it has the strength of $\frac{1}{2}$ " drives and the practical compactness of the $\frac{3}{8}$ " series. Nuggets were enthusiastically used and mechanic-endorsed before the war took away the necessary HEXITE.

Just as soon as HEXITE steel is again available — Blackhawk will rush NUGGETS to you. Steel strikes naturally have delayed Hexite, but Nuggets should appear come summer. Tell your jobber to put you on top of the list for Nuggets.

A Product of
BLACKHAWK MFG. CO., Dept. W646, Milwaukee, Wis.



**7/16" Drive
Wrenches**



**3/8" Drive
Wrenches**



**1/2" Drive
Wrenches**

Why Buy Two when ONE does the Job

TO PRESENT NUGGET OWNERS:
If you have lost any of your prewar NUGGET Wrenches, see your Blackhawk Jobber. He will arrange delivery of replacements. Blackhawk wishes to protect the investment of present owners, even if NUGGETS can not be made and sold on a mass production scale to new buyers until HEXITE steel is again available.

Only NUGGET Socket Wrenches Have The DOUBLE-DUTY DRIVE . . . They are made by

BLACKHAWK

NUGGET
SOCKET WRENCHES

**YOU WOULDN'T PUT NEW
PISTON RINGS ON
DIRTY PISTONS**



*Don't do Half a
Brake System Job...*



PURITANIZE

It certainly wouldn't be good workmanship to put new piston rings in an engine without first cleaning the block and the cylinders. It's just as bad to add a "shot" of brake fluid to hydraulic lines that are gummed up with old oxidized brake fluid.

Real workmanship and safety call for a Puritanize job on that brake system. There are only two steps to Puritanize.

- 1** Clean out the hydraulic line with fast-acting Puritan Flushing Fluid.
- 2** Refill with non-gumming all-



PURITAN COMPANY, INC.
ROCHESTER, NEW YORK

"miscible" Puritan Hydraulic Brake Fluid.

With the Puritanize program you change a 35c sale to a profitable and necessary brake system job.

The need for a Puritanize job is so logical and the results in assurance of safety so convincing that every car owner is a live prospect.

Free five-color displays and banners help you make Puritanize customers! Get your supply of Puritan Brake System Products and your displays from your jobber now.

Clearing House

(Continued from page 84)

ing radiators. In addition, it might be caused by a clogged engine water jacket. For in many cases, an effort is placed on cleaning the radiator and the engine water jacket is ignored. I would suggest you once more clean the radiator and also the engine water jacket. Further in this connection, it might pay to remove the cylinder head so as to observe the condition of the interior of the water jacket.

Some of the models of Pontiac had a water distributing tube which was designed to direct a jet of water against the valve seats. After some years of operation these distributing tubes would rust and it would be necessary to replace them. I would suggest you check this condition on your car and if necessary replace the tube.

In connection with the radiator, I would suggest you check the rate of flow, which should be 20.1 gallons per minute. If it is materially less than this it indicates that the radiator is still clogged.

Noise in Car

We have a 1941 Master deluxe Chevrolet Tudor that has a bad noise in it which is causing us a lot of trouble. The noise sounds like it could or would be the drive shaft bushing back of the universal joint, but we installed those bushings, also a universal joint, a new drive shaft, new ring gear and pinion, new pinion bearings, new carrier bearings and nothing we did to that seems to help.

We checked the transmission and installed all new bearings in it and a new pilot shaft, but the noise is still there. You don't get the noise as long as the car is pulling, but when you get it to a cruising speed, say 50 m.p.h., or going down hill with the motor idling, or in other words when the car is running over the motor, you can hardly stay in the car for the roar. If you can give us some pointers to relieve the trouble, we would be very much pleased.—Williams Garage, Monroe City, Ind.

YOU certainly have done a very thorough job in an endeavor to overcome the noise you are experiencing with the 1941 Chevrolet. It would quite definitely seem that you have eliminated any possibility of noise originating either in the rear axle, or the transmission. Judging by the description you have given, it would seem that there would be a possibility of the trouble being caused by defective engine mountings or a loose cross-member. I would suggest that you check these two points, and I am quite sure that you will locate your trouble.

EVERY WORKING HOUR OF THE DAY

A UNITED MOTORS FRANCHISE

Pays Dividends In Business And Profits



With a United Motors franchise, the largest *pre-sold* parts and service market in America becomes *your* market. Because United Motors lines are *original equipment* on America's leading cars and trucks, they are nationally known, nationally preferred, and in constant demand.

But this big, ready-made market is far from all you get with a United Motors franchise. You get *complete* parts lines—for old cars as well as new. You get the latest and best service information, sales programs, merchandising help—all that you need for a profitable and progressive service business.

Service sales records everywhere prove the value of a United Motors franchise. You, too, can share in the dividends it pays. See your United Motors distributor or write us direct.

A UNITED MOTORS FRANCHISE

Gives You These Advantages

UP-TO-THE-MINUTE SERVICE INFORMATION—easy to use; speeds your work.

ORIGINAL-EQUIPMENT PARTS—leading lines of leading manufacturers.

NATIONALLY KNOWN LINES—respected and accepted everywhere.

TIMELY SALES PROGRAMS—individually planned.

MERCHANDISING ADVICE—based on long experience.

"SINGLE-SOURCE" CONVENIENCE—saves time, simplifies ordering.

COMPLETE PARTS LINES—parts for old cars and new.

UNITED MOTORS SIGN—business-boosting identification.

UNITED MOTORS SERVICE

DIVISION OF GENERAL MOTORS CORPORATION • GENERAL MOTORS BUILDING, DETROIT 2, MICHIGAN

DELCO Batteries

AC Fuel Pumps, Gauges
and Speedometers

INLITE Brake Lining

DELCO Radio Parts

HYATT Roller Bearings

DELCO Auto Radios

HARRISON Heaters

DELCO Home Radios

NEW DEPARTURE Ball
Bearings

HARRISON Thermostats

DELCO Shock Absorbers

GUIDE Lamps

DELCO-REMY Starting,
Lighting and Ignition

KLAXON Horns

HARRISON Radiators

DELCO Hydraulic Brakes

Let That Crankcase Breathe

(Continued from page 43)

The "positive" type of crankcase ventilating system, on the other hand, is called positive because the vacuum in the manifold is used to pull air through the engine.

The positive crankcase ventilating system used on the late prewar DeSotos is interesting. As you may know, there's a ventilator housing and valve in the side of the block with a tube running over into the intake manifold.

Air enters the oil filler pipe, picks up crankcase fumes and is drawn through the valve which is put there to regulate the amount of air flow then flows on over to the intake manifold. The point to watch is the valve and tube. Being the highway for all kinds of airborne corruption, they may become clogged. When this condition occurs the ventilating system stuffs up, allowing pressure to build up with all

the consequences heretofore mentioned.

When a customer brings in his DeSoto with a rough fast idle, the trouble may be a clogged tube. This sabotages the valve and allows too much air to bleed into the intake manifold, and upsets the air-fuel mixture. The remedy, of course, is a dry-cleaning of the ventilator valve assembly and a swabbing of the tube.

Incidentally, the slip stream type of crankcase ventilating system is now used on the 1946 DeSoto.

In any case, whatever ventilating system is used, the big job is to propagandize the need for more frequent checking and cleaning of the filters and breathers.

Packard Experimenting With Jet Aircraft Engines

George T. Christopher, president and general manager of the Packard Motor Car Company, discloses in the 42nd Annual Report to stockholders that Packard is experimenting with jet propulsion aircraft engines at its Toledo plant and at the Willow Run Army Air Base.

"The facilities," he explains, "are wholly Government-owned, and the work carried on is under Government contract. The interest of the company is, first, to be of service in the promotion of research for the future advancement of our country's air power; and, second, to have an intimate knowledge of future possibilities of established principles of advanced engineering."

Christopher also reveals developments in the marine engine field. Packard will build for the small-boat market, he says. Also a much larger marine engine than those produced for all PT-Boats during World War II has been designed and released for production.

"We have Government orders," Christopher adds, "to continue the production of a considerable number of 1,800-horsepower engines of improved design and a substantial quantity of marine engine spare parts."

Appointment Named

Appointment of David W. Lee, who has been engaged in the automotive business in Michigan since 1934, to head the truck advertising division of the Ford Motor Co. was announced by J. R. Davis, director of sales and advertising. He worked with the Chrysler engineering division until 1937, when he became affiliated with the Dodge truck sales department, eventually becoming truck sales engineer.

Shortly after Pearl Harbor, Lee worked on negotiations and administration of government contracts for trucks with Chrysler's fleet sales division and for the past year had been active in preparations for postwar operations of that department.

PRACTICAL DAN SAYS:

"HERE'S ANOTHER LABOR-SAVER"

The Kleeer-Flo
CARB-U-TATOR

SHOWING CARB-U-TATOR FITTED AS AUXILIARY TO KLEER-FLO MODEL KS-30

\$29.95
F.O.B. MINNEAPOLIS

PRACTICAL DAN
The KLEER-FLO man

The Kleeer-Flo CARB-U-TATOR Sr., for quick-thorough cleaning of carburetors, fuel pumps, hydraulic brake and similar parts, tough jobs that do not react to milder methods, in 15 to 30 minutes.

Turbulence is produced by metered air-action, with regulating-valve control, subjecting parts to constant action of working fluid with greatly increased scrubbing effect.

AUXILIARY TO ALL KLEER-FLO MODELS OR FOR BENCH USE

Kleeer-Flo HI-T CARBUSOL

An especially developed cleaning compound for removing carbon, gummy residues, paint, analine dyes, varnish, "caked" dirt, grease and oil from automotive parts and metallic assemblies. A cold cleaner, non-toxic, non-evaporating, not injurious to metal. Recommended for use in Kleeer-Flo CARB-U-TATOR. Write for details.

Practical Products Company
MANUFACTURERS OF MECHANICAL PARTS, CLEANERS, CLEANING COMPOUNDS, KOOL-ANT PUMPS
2632 NICOLLET AVENUE • MINNEAPOLIS 8, MINNESOTA

How Soon

PLENTY OF NEW CARS AND TRUCKS FOR EVERYONE ?



CAR MORTALITY HIGH

Between July 1, 1941 and July 1, 1944, 3,585,089 cars disappeared from the highways. Car mortality now is progressing at the rate of 3,365 per day. Total car registration on July 1, 1944 was 24,114,922. It is much less than that now. Estimated 1946-47 production, with old-car mortality continuing, makes it highly probable that the dawn of 1948 will still find a considerable car shortage.

Meanwhile TOLEDO Automotive Parts Carry On

Indications are it will be some time before everyone can have the new cars and trucks they are dreaming about. So, America's Men Who Know Motors continue to specify genuine Toledo automotive parts whenever replacements are necessary. They are insuring the maximum usage of the greatest number of vehicles. Remember there are no finer automotive parts than Genuine Toledo. And Toledo, proved in the rugged years when cars *had to* stand up, will go into the era to come as an ever-active factor in the newest and finest automotive developments.



The TOLEDO

STEEL PRODUCTS COMPANY • TOLEDO, OHIO, U. S. A.
SINCE 1906

Makers of Fine Automotive and Aircraft Parts

APRIL, 1946

When writing to advertisers please mention Motor Age

89

British Standard on Display

(Continued from page 44)

type and the disc is cushioned at the center with four springs.

The transmission is entirely new, being a four speed box with synchromesh provided in high, third and second. Gears are of the double helical constant mesh type. The ratio in high is 5.14 to 1, third 7.46 to 1, second 12.5 to 1 and first 20.3 to 1. The lubricant filler is provided with a dip stick. Hardy-Spicer all metal

universal joints with needle bearings are used in the drive line. The universal joints are provided with grease fittings.

The rear axle is semi-floating with a pressed steel housing and spiral bevel reduction gears with a ratio of 5.14 to 1. A combined oil filler and dip stick for lubricant level is provided.

The frame is box section pressed

steel low level to eliminate foot wells. All crossmembers and brackets have welded joints on the frame side rails.

Independent front wheel suspension is used with one transverse semi-elliptic spring. Spring action is controlled by Luvax hydraulic piston type shock absorbers. The steering gear is a worm and nut type Burman Douglas. The turning circle is 34 ft. and steering wheel is 16½ inches in diameter. The rear springs are semi-elliptic and the shackle bushings are "Silentbloc."

Bendix internal mechanical brakes operate on all four wheels. Pressed steel brake drums are used, the fronts being 1¼ inches wide and 8 inches in diameter and the rears are 1½ inches wide and 6 inches in diameter. Tires are 4.75/16. Road clearance is 7 inches.

Three body styles are offered on the 8 h.p. chassis, the four passenger saloon, the drop head coupe, and the tourer. Standard color schemes offered are, black exterior with fawn interior and grey exterior with blue interior.

Maximum speed claimed in high gear is 60 m.p.h., and 43 m.p.h. in 3rd gear.

The 12 h.p. chassis uses a four cylinder ell head engine. Bore is 69.5 mm. or 2.74 in. and the stroke is 106 mm. 4.5 in. with a piston displacement of 1609 c.c. or 98.0 cu. in. Developed h.p. is 44 at 4000 r.p.m. Other details of the engine are similar to the 8 h.p. except that the cylinder bores have a stainless iron insert at the top of the bore extending part way down the barrel. Lubrication is pressure throughout, including the valve tappets and wrist pins. Cooling is through pump and fan, and is thermostatically controlled.

Other details of the chassis are similar to the 8 h.p. with the exception of the tire size which is 5.50/16, the electrical system which is 12 volt, the rear axle ratio is 4.86 to 1 and the steering gear which is a Marles cam and roller.

Standard color combinations for the 12 h.p. are black exterior with fawn interior, black exterior with red interior, black exterior with green interior and grey exterior with blue interior.

New Use for Product Found

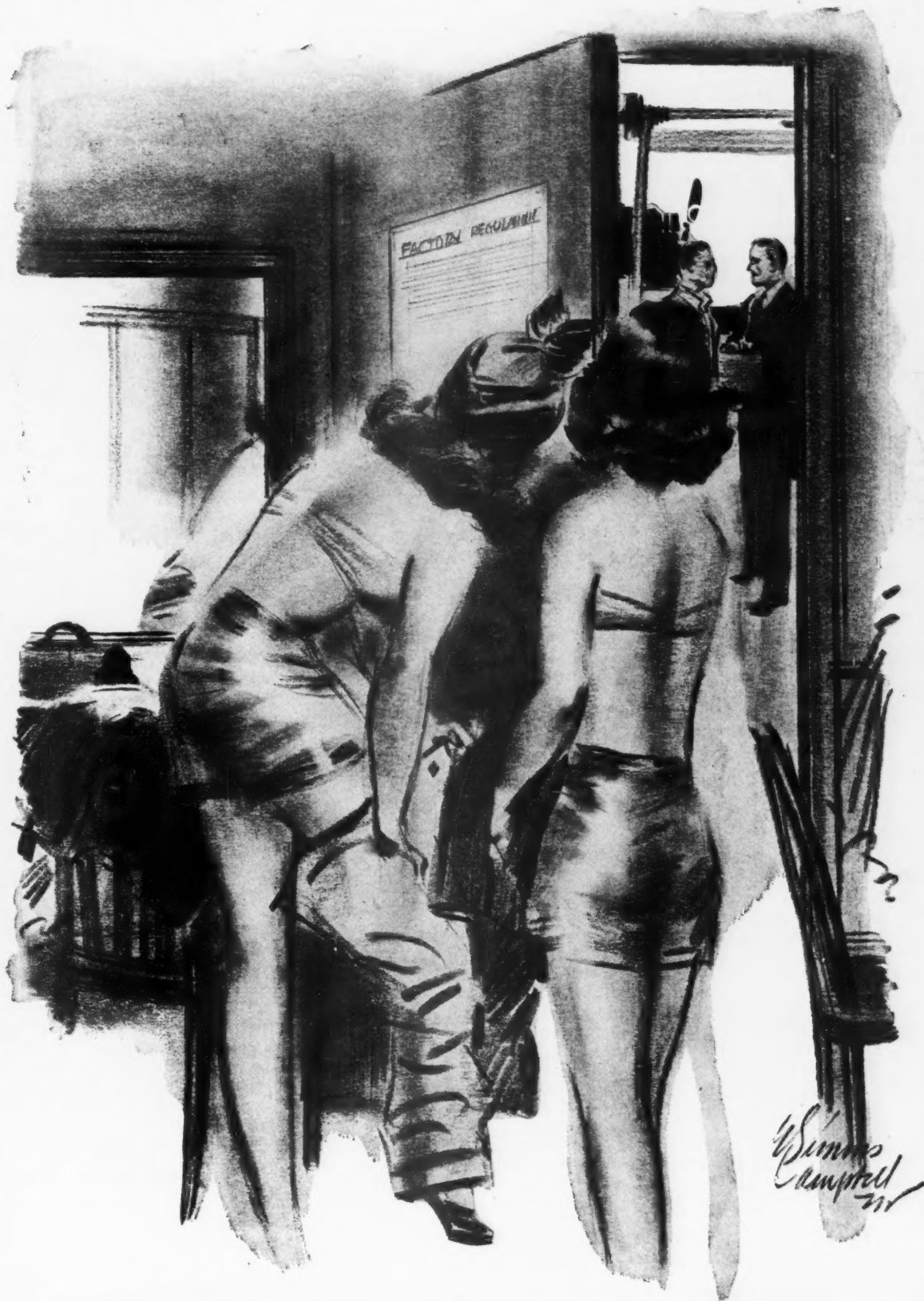
Safety & Maintenance Co., New York 1, N. Y. and Waverly Petroleum Products Co., Philadelphia 6, Pa., report an unusual use for their product Sol-Speedi-Dri, an oil and grease absorbent for garages, service stations, and car dealers. The general manager of the Great Danbury Fair writes that Sol-Speedi-Dri was used with remarkable success on the macadamized midget auto speedway. The track was covered with Sol-Speedi-Dri to remove moisture, oil and grease, making it dry and safe for the speeding midgets.



Original Equipment

• You can buy Johnson Bronze Automotive Bushings and Bearings with complete confidence . . . and here is why. For more than 40 years we have remained a preferred source of supply of practically all leading manufacturers of American made cars and trucks. All of our bearings and bushings, whether for original equipment or replacement, are made to one standard of quality and precision . . . the highest possible. The next time you need automotive bearings or bushings specify—JOHNSON BRONZE.

JOHNSON BRONZE
SLEEVE BEARING HEADQUARTERS
455 S. MILL STREET NEW CASTLE, PA.



*"I recognize his 'line'—
he must be a Weatherhead Salesman!"*

THE WEATHERHEAD "LINE"—FITTINGS·FUEL LINES·DRAIN COCKS·DASH CONTROLS·BRAKE PARTS

Shop Wage-Hour Law Coverage

(Continued from page 45)

more than four establishments and whose annual volume of business exceeds \$500,000.

But this exemption must be considered in the light of Supreme Court decisions which have given the most liberal construction possible to the wage-hour law.

The amendment purports to exempt employees of service or retail establishments employed "by an employer

having not more than four such establishments and with a total annual volume of sales or servicing of not more than \$500,000." It would appear that the conclusion is warranted that each retailer whose activities "affect commerce" must meet both of the conditions specified in order to qualify for the exemption.

Many individual retail and service establishments do more than \$500,000

worth of business annually. Under the proposed amendment, such establishments would appear not to be exempted from the Act since one condition of the proposed exemption would not be met.

It would seem, therefore, that the proposed exemption is designed to exclude from the coverage of the Act only those retail or service establishments having an annual volume of business not exceeding \$500,000 annually, and small chain store type business with not more than four outlets and with aggregate annual business not exceeding \$500,000.

H. P. Schade Heads New Grote Automotive Division

The Grote Manufacturing Co., Bellevue, Ky., major manufacturer of plastic reflectors and lenses for 20 years, has established an automotive division, with sales offices located in Moorestown, N. J.



Herman P. Schade, formerly vice president and general sales manager of Arrow Safety Devices Co., heads the new division. And Eric H. Schade, equally well-known to safety engineers and wholesalers, and long associated with Arrow, has also joined the Grote company as assistant sales manager.

Walter Grote, president of the company, and a pioneer in the injection method of moulded plastics, announced the first product to be marketed by his automotive division will be a radically new plastic reflector lens road flare, which neither leaks nor loses its charge. The Grote flare is endorsed by the Interstate Commerce Commission and many state motor vehicle administrations.

Perfect Circle Piston Ring to Sponsor Race Broadcast

Completed plans for the broadcast of the first 500 mile auto race at Indianapolis speedway since the war were worked out in Chicago by DeWitt Mowrer, of Mutual Broadcasting System; Herman Teetor, for Perfect Circle Piston Ring Co., Hagerstown, Indiana; and Wilbur Shaw, president of the Indianapolis Speedway Corp. The broadcast will be unique in "firsts"—the first time the race has ever been broadcast coast-to-coast exclusively by a network, and the first time it has ever been sponsored.

COMPARE

SEALED BEAM

Autopart

AUTOPART SEALED BEAM CONVERSION KITS

Take the actual units themselves . . . any or all makes. Set 'em up on the counter side by side . . . and COMPARE them with AUTOPART. Check these AUTOPART advantages: (1) Parking Light built into every unit. (2) Kits furnished completely assembled for quick and easy installation. (3) Precision-made to mount and fit perfectly on the car. (4) Engineered for maximum efficiency. (5) Enhances the car's appearance and value. (6) Available in a complete line to convert practically all pre-1940 cars and trucks to Sealed Beam Lighting. (7) Laboratory tested and Road tested. Approved in all states.

PATENT PENDING

SOLD ONLY THROUGH JOBBERS

Autopart

AUTOPART MANUFACTURING COMPANY

1525 SOUTH MICHIGAN AVENUE • CHICAGO 5, ILLINOIS

NOW Schrader TIRE PRESSURE GAUGES

REG. U.S. PAT. OFF.

ARE BACK AGAIN—CHROMIUM PLATED



During the war, Schrader Type Tire Pressure Gauges were *standard equipment* on every U. S. A. Military pneumatic tired vehicle. NOW, these precision engineered Gauges are again available for you *to use and to sell*.

Built for accuracy and long wear, every service station and truck owner should have one. Intelligent use will help make your tires last longer.

THE STANDARD "ALL-PURPOSE"

DUAL FOOT GAUGE

FOR TRUCKS, BUSES AND GENERAL USE

"Inner Duals" are easily reached for accurate pressure reading. Convenient to carry. Gauge is equipped with the handy "hang-up" ring. Your truck customers will ask for Schrader Gauges. Use one yourself—the rest will sell themselves.

RETAIL PRICE

\$4.50

THE DELUXE

DUAL FOOT "TRUTEST SPECIAL"

This portable "master gauge" is designed for checking accuracy of other Tire Gauges and Indicators. Guaranteed for 18 months. Price includes 2 FREE factory recalibrations within an 18 month period.

RETAIL PRICE

\$7.00

Schrader
CONTROLS THE AIR

Order your needs from your regular source of supply. And don't forget to stock a few extra gauges for "quick sale" to your truck customers. A profit item!

A. SCHRADER'S SON, Division of Scovill Manufacturing Company, Incorporated, BROOKLYN 17, NEW YORK
ORIGINATORS OF THE COMPARATIVE AIR LOSS SYSTEM FOR FLAT TIRE PREVENTION

APRIL, 1946

When writing to advertisers please mention Motor Age

93

Ground Broken for New Lincoln-Mercury Plant

Benson Ford, grandson of the founder of the Ford Motor Co. and a director of the company, excavated the first earth at ground-breaking ceremonies for the new \$8,500,000 Lincoln-Mercury automobile assembly branch at Metuchen, New Jersey on March 18.

Climbing into the driver's seat of a giant earth-mover Mr. Ford scooped up the first load of dirt while business and civic leaders of nearby Metuchen, New Brunswick and other New Jer-

sey communities stood by.

"Here is a concrete example of the policy of the Lincoln Division of the Ford Motor Co., which is to plow all of its war earnings back into the business," Mr. Ford said. "We have faith in America. We are putting our bets on the future—on greater production, in order that we may help provide the cars and the jobs which America needs so badly today."

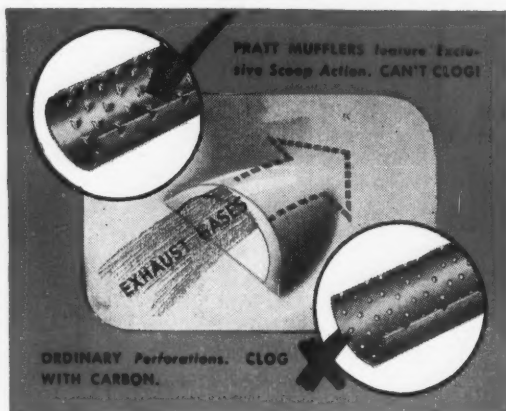
The new plant is situated on U. S. Route No. 1 about four miles northeast of New Brunswick and a mile west of Metuchen. It is expected to begin operation in March, 1947, em-

ploying 2,500 persons and turning out 200 Mercury and 150 Lincoln cars daily, T. W. Skinner, general manager of the Lincoln-Mercury Division said.

Covering an area of approximately 78 acres, the project includes an assembly plant 470 feet wide by 1040 feet long, an office building 319 feet long, with a display room 104 feet by 55 feet just off the lobby, a boiler house and an oil and paint house, a test track for newly assembled cars, and a six acre parking lot.

The Metuchen plant is part of the \$35,000,000 postwar expansion program being carried out by the Lincoln Division to modernize and streamline existing Lincoln production facilities and to construct the Metuchen plant and another assembly plant in Los Angeles, California.

CLEAN UP PROFITS with the Muffler that Cleans Itself!



Look at those pictures! Anyone can see HOW this muffler cleans itself, and why it's a *better* muffler—to use or sell.

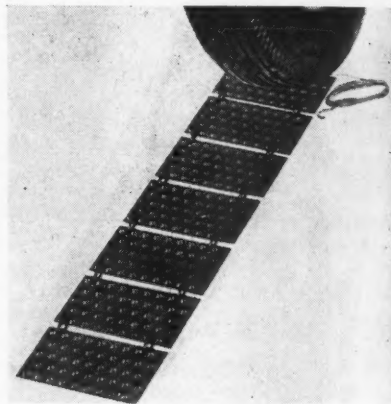
Tell this simple Pratt story and 9 times out of 10 you make a Pratt sale: Pratt Mufflers have no baffles that set up excessive, power-draining back-pressure. Instead, *patented* Pratt scoops dig into the exhaust stream, sweep gases *directly* into silencing chambers. And carbon, Mister, is swept right along *with* the gases; the scoops are scoured clean, automatically, as carbon and gum pass out. A Pratt Muffler just can't clog!

But that's not all. *Only* Pratt Mufflers are Spiral-Built. A continuous 4-ply "backbone" gives them added strength, adds eye and buy appeal. Pratt Spiral Mufflers are Oxino-finished to stay clean and rust-free in your stock. Other big features, too. Investigate!

"Tire-Trac"

(Continued from page 48)

passenger cars and light delivery trucks. It forms a surface 6 in. wide and 22 in. long. The Heavy Duty Model is for trucks, buses and all types of heavy transportation ve-



hicles. Its track is 12 in. wide and 50 in. long. Since each of these heavy duty models weighs about 25 lbs., a web belting carrier arrangement is provided for it.

1 out of 2 cars is a Pratt Muffler Prospect! HERE'S HOW TO CASH IN

Cold statistics tell the story of a red-hot opportunity: actual figures of a recent typical year show 30 million cars on the road. And 15 Million owners replaced mufflers and pipes that year—spending \$67,000,000 to do it.

Get your share—and get it *faster*—with the muffler that's easiest to sell.

Pratt offers:

1. A proved, quicker-selling muffler, OK'd by Underwriters' Laboratories, Inc.
2. A broad profit-protection selling plan.
3. Powerful tested selling aids.

See your jobber or write Pratt today!

Pratt Replacement Mufflers are sold only through jobbers.

PRATT

Spiral MUFFLERS

Pratt Industries, Inc., Frankfort, N. Y.
In Canada: PRATT CHUCK CO., Ltd., Toronto, Ont.

Pratt Industries, Inc., Frankfort, N. Y.
I am interested in selling Pratt Spiral Mufflers.
Please forward name of nearest PI jobber and have him call on us.
Name _____
Address _____
City & State _____ Zone _____
Signed _____ Title _____





One of the most reliable parts of an engine is the AC Fuel Pump, heart of the fuel system. That's because it's *first quality* in design, material, and manufacture,—built to meet the engine maker's own requirements.

Serve your customers best, and protect your own reputation, by replacing worn pumps with new or factory-rebuilt AC's, and making repairs with authentic AC Parts Kits or Diaphragm Kits.

QUALITY FEATURES

- ★ Careful control of pressure and flow assuring correct fuel supply.
- ★ Accurate hardening, precision machining of parts essential to long life.
- ★ Accurate control of spring tensions and temper.
- ★ High, and controlled, pin hardness.
- ★ 4-layer, patented-impregnation diaphragms of special airplane cloth.
- ★ Carefully finished rocker arm pads, located to center on cam.
- ★ Split-hair rocker arm clearance and control of pad hardness.
- ★ Uniform pull rod hardness at pin holes.

SEND FOR AN AC PUMP SHOP MANUAL
 Field Service Department, AC Spark Plug Division, G. M. Corp.
 910 Mott Foundation Building, Flint 3, Michigan
 Gentlemen: Please send at once, no charge, the AC Shop
 Manuals checked:
☐ How to Service Spark Plugs ☐ HOW TO SERVICE FUEL PUMPS
☐ How to Service Spark Plug Cleaner ☐ How to Service Air Cleaners
☐ How to Service Oil Filters ☐ How to Service Speedometers
☐ How to Service Ammeters and other Instruments **WA-4**

NAME _____
 FIRM _____
 STREET ADDRESS _____
 CITY _____ STATE _____

OPA Announces Revised New Car Ceiling Prices

INCREASES in factory ceiling prices for 1946 model passenger automobiles manufactured by the Chrysler, Ford, Hudson and Nash companies, were announced early this month by the Office of Price Administration.

The actions, reflect approved wage increases. Similar actions covering other makes of cars are being prepared, OPA said.

OPA's policy calls for absorption of

cost increases by dealers wherever possible. Although some absorption is required in the case of these factory increases, retail ceiling prices for the models affected in the recent action are increased slightly.

The increases at retail range from \$1 to \$2 on some models of Plymouths to \$26 to \$51 on the Lincoln cars. The retail price of one model of Nash automobile is decreased \$1 as a result of this action, because the in-

creased dealer absorption factor more than offsets the increased factory price.

The new prices become effective as of March 11, 1946, the date upon which adjustable pricing for Chrysler, Ford and Hudson dealers was authorized, and, in the case of Nash, on March 21, the date on which adjustable pricing was authorized for Nash automobiles.

THE NEW RETAIL CEILING PRICES

The newly revised retail prices for Chrysler, Ford, Nash and Hudson cars, adjusted upward to reflect the recent wage increases, compare with the previous ceilings as follows:

RETAIL CEILING PRICE

(Does not include excise taxes, transportation, preparation and handling charges or optional equipment)

FORD

| | 1942 | |
|--|-------|-----------|
| | New | Old Price |
| De Luxe Eight | \$846 | \$834 |
| 3 passenger coupe.... | 895 | 882 |
| Tudor sedan | 945 | 931 |
| Fordor sedan | | |
| Super De Luxe Eight | | |
| 3 passenger coupe | 904 | 891 |
| Tudor sedan | 954 | 940 |
| Fordor sedan | 1004 | 989 |
| Sedan coupe | 991 | 977 |
| De Luxe Eight | | |
| Chassis with open or closed end | 687 | 676 |
| Super De Luxe Eight | | |
| Convertible coupe | 1139 | 1124 |
| Station wagon | 1186 | 1170 |
| Chassis with open or closed front end | 754 | 744 |

LINCOLN

| | | | |
|--|------|------|------|
| Sedan, 4 door, Model 73. | 1825 | 1799 | 1700 |
| Club coupe, Model 77.... | 1810 | 1784 | 1700 |
| Sedan, 4 door, Model 73, with custom interior .. | 1943 | 1915 | 1795 |
| Club coupe, Model 77, with custom interior.. | 1928 | 1900 | 1795 |
| Convertible coupe | 2261 | 2229 | 2139 |
| Continental coupe | 3445 | 3394 | 2989 |
| Continental cabriolet ... | 3511 | 3459 | 2989 |

MERCURY

| | | | |
|-------------------------|------|------|---|
| Sedan (2 door) | 1129 | 1114 | * |
| Town sedan (4 door).... | 1177 | 1162 | * |
| Sedan coupe | 1166 | 1151 | * |
| Club convertible | 1338 | 1320 | * |
| Station wagon | 1350 | 1333 | * |

HUDSON

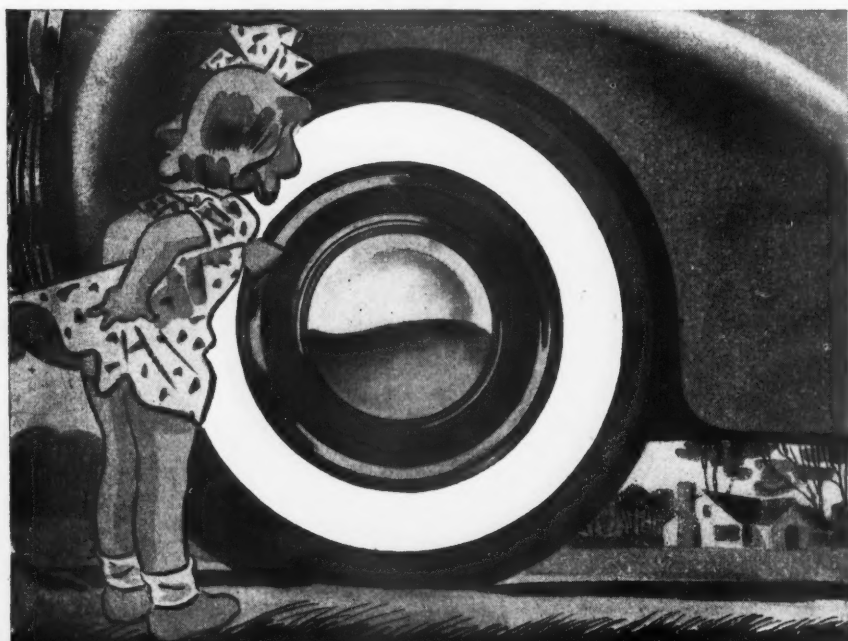
| | | | |
|-------------------------------|------|------|------|
| No. 51 Series Super Six | | | |
| Chassis | 843 | 831 | * |
| 3 passenger coupe | 1101 | 1085 | 1029 |
| Brougham (2 door) ... | 1127 | 1111 | 1057 |
| Sedan (4 door) | 1164 | 1147 | 1085 |
| Club coupe | 1162 | 1145 | 1083 |
| Convertible brougham. | 1446 | 1426 | 1325 |
| Commodore Six | | | |
| 3 passenger coupe | 1208 | 1191 | 1107 |
| Sedan (4 door) | 1280 | 1263 | 1173 |
| Club coupe | 1282 | 1264 | 1167 |
| Brougham (2 door) ... | 1247 | 1230 | 1144 |
| No. 53 Series Super Eight | | | |
| Chassis | 932 | 919 | 885 |
| Club coupe | 1286 | 1268 | 1253 |
| Sedan | 1289 | 1270 | 1262 |
| No. 54 Series Commodore Eight | | | |
| Sedan | 1353 | 1334 | 1262 |
| Club coupe | 1341 | 1323 | 1253 |
| Convertible brougham. | 1587 | 1565 | 1489 |

* No 1942 price listed.

PLYMOUTH

| | | | |
|--------------------------|------|------|-----|
| Plymouth De Luxe | | | |
| 4 door sedan | 999 | 998 | 882 |
| 2 door sedan | 949 | 947 | 843 |
| 3 passenger coupe | 912 | 910 | 805 |
| Club coupe | 990 | 988 | 878 |
| Plymouth Special De Luxe | | | |
| 4 door sedan | 1027 | 1025 | 928 |
| 2 door sedan | 987 | 985 | 888 |
| 3 passenger coupe | 952 | 951 | 848 |
| Club coupe | 1029 | 1028 | 921 |

(Continued on page 98)



WHITE where you want it!

To restore the original beauty and lustre of white sidewall tires, or to place a gleaming white sidewall on a tire where only black appeared before, you can safely recommend Durkee-Atwood's White Sidewall Tire Paint. Time tested, with an all-rubber base, here is a liquid rubber coating that is guaranteed not to chip or peel. Permanent . . . a part of the tire itself.

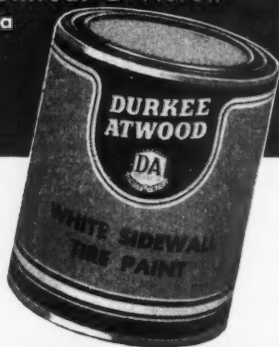
Catalog Pages and More Detailed Information Will Be Gladly Sent on Request

DURKEE-ATWOOD CO., Chemical Division
Minneapolis 13, Minnesota

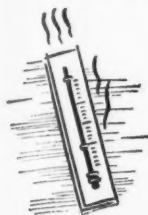
WHITE where you want it...
RIGHT when you want it.

DURKEE-ATWOOD
White Sidewall
TIRE PAINT

INNER TUBES • V-BELTS • RADIATOR HOSE
RUBBER • PLASTIC • CHEMICAL PRODUCTS



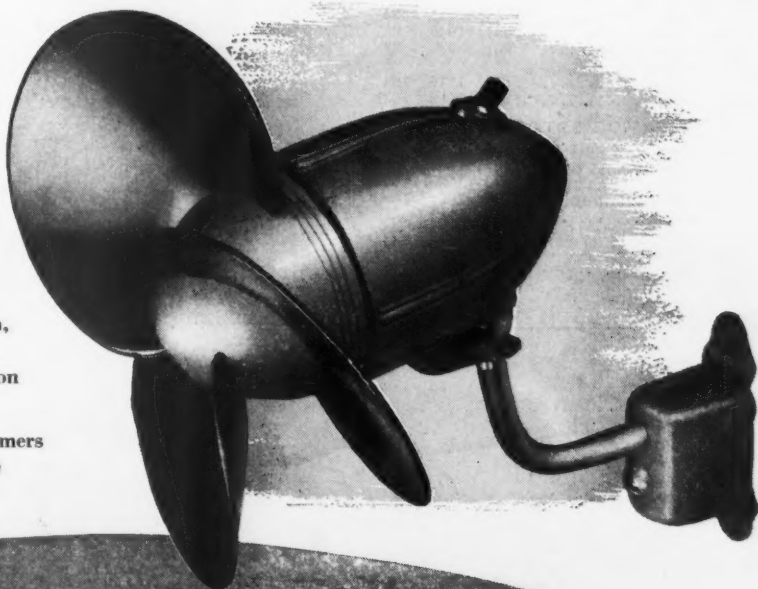
Takes the simmer out of summer driving!



The hotter it gets the bigger the demand for WIT-EEZ AUTO FAN!

This nationally-advertised fan with the safe rubber blades circulates *coolness* during the summer months as efficiently as it defrosts windows in the winter. With WIT-EEZ turned on, windows need be kept only partly open, reducing wind roar . . . and on humid days, the fan's action prevents fog from forming on windshields.

To enjoy extra summer profits, slip your customers this driving tip: WIT-EEZ AUTO FAN, for safer, more pleasurable driving *summer and winter!*



Pre-Sold! WIT-EEZ national advertising reaches and reminds millions of car-owners in the Saturday Evening Post, Collier's, Liberty, Esquire, National Geographic and Trailer Topics.



WITTIE MFG. & SALES CO., 1414 S. WABASH AVE., CHICAGO 5, ILL.
Branch Offices and Representatives in Leading Cities

APRIL, 1946

When writing to advertisers please mention Motor Age

Revised Car Prices

(Continued from page 96)

DODGE

| | | | |
|------------------------|------|------|------|
| Dodge De Luxe | | | |
| 4 door sedan | 1087 | 1086 | 991 |
| 2 door sedan | 1044 | 1043 | 951 |
| 3 passenger coupe | 981 | 980 | 888 |
| Dodge Custom | | | |
| 4 door sedan | 1147 | 1145 | 1041 |
| Club coupe | 1137 | 1136 | 1038 |

DE SOTO

| | | | |
|------------------------|------|------|------|
| De Soto De Luxe | | | |
| 4 door sedan | 1169 | 1168 | 1093 |
| 2 door sedan | 1139 | 1138 | 1065 |
| 3 passenger coupe | 1061 | 1060 | 1000 |
| Club coupe | 1161 | 1160 | 1082 |
| De Soto Custom | | | |
| 4 door sedan | 1230 | 1229 | 1142 |
| 2 door sedan | 1204 | 1203 | 1132 |
| Club coupe | 1220 | 1219 | 1132 |

CHRYSLER

| | | | |
|-------------------------|------|------|------|
| Chrysler Royal | | | |
| 4 door sedan | 1265 | 1264 | 1167 |
| 2 door sedan | 1237 | 1236 | 1144 |
| 3 passenger coupe | 1143 | 1142 | 1065 |
| Club coupe | 1262 | 1261 | 1158 |
| Chrysler Windsor | | | |
| 4 door sedan | 1353 | 1352 | 1244 |
| 2 door sedan | 1302 | 1301 | 1209 |
| 3 passenger coupe | 1205 | 1204 | 1129 |
| Club coupe | 1317 | 1316 | 1217 |

CHRYSLER—EIGHT CYLINDER

| | | | |
|------------------------|------|------|------|
| Saratoga | | | |
| 3 passenger coupe | 1429 | 1428 | 1315 |
| 2 door sedan | 1496 | 1495 | 1355 |
| Club coupe | 1517 | 1516 | 1370 |
| 4 door sedan | 1530 | 1529 | 1395 |
| New Yorker | | | |
| 3 passenger coupe | 1521 | 1520 | 1375 |
| 2 door sedan | 1588 | 1587 | 1430 |
| Club coupe | 1591 | 1590 | 1440 |
| 4 door sedan | 1604 | 1603 | 1465 |

NASH—F.O.B. Kenosha, Wis.

| | | | |
|----------------------------|------|------|------|
| "600" Series | | | |
| 2 door sedan | 995 | 987 | 946 |
| 4643 brougham | 1047 | 1038 | 961 |
| 4648 4 door sedan | 1051 | 1041 | 971 |
| Ambassador 6 Series | | | |
| 4669 2 door sedan | 1083 | 1084 | 1119 |
| 4663 brougham | 1174 | 1165 | 1134 |
| 4668 4 door sedan | 1188 | 1179 | 1144 |

Few Changeovers to Be Made This Year

All indications now point to few if any changeovers by car manufacturers from 1946 to 1947 models this year. This does not mean that there will be no 1947 models introduced in 1946, but those that do appear are very likely to be lines which have not appeared before as 1946 models. Any production this summer or fall would undoubtedly be classed as 1947 models. This applies to the Nash eight-cylinder line, the Kaiser and Frazer cars, and perhaps Willys. Also, if the Ford and Chevrolet light cars should be ready to announce late this year, they too would be tagged as 1947 models. Studebaker is reported working on a car still smaller than the Champion and this would be a 1947 model if introduced this year or early next year.

However, the fact remains that there is little likelihood of many manufacturers now in production stopping production lines on going models and switching over to something different with a 1947 classification. Ford gave the first official tipoff recently, when Jack Davis, head of sales and advertising, announced that Ford would not change models this year. Unofficially, other companies have indicated that they too will not go through a model change this year. Chrysler, although not on record in this respect, has not yet placed die work for new models in the tool and die shops of Detroit. Another indication is that

(Continued on page 150)

*"Every Mechanic
needs These Two Sets!"
Says: Central Mike*



SET NO. 808

Inside Micrometers
Range 1½ to 8 inches.

\$12.00

Complete with Extension
Handle and DeLuxe Plush-
Lined Case

SET NO. 745 RL

Outside Micrometers
Range 0 to 4 inches.

\$46.50

Complete with Ratchet Stops,
Lock Nuts, Standard Test
Gauges and DeLuxe Hinged
Plush-Lined Case



WRITE TODAY FOR CATALOG NO. 17

The entire line of individual micrometers and
complete sets illustrated and fully described.

THE CENTRAL TOOL CO., AUBURN, RHODE ISLAND

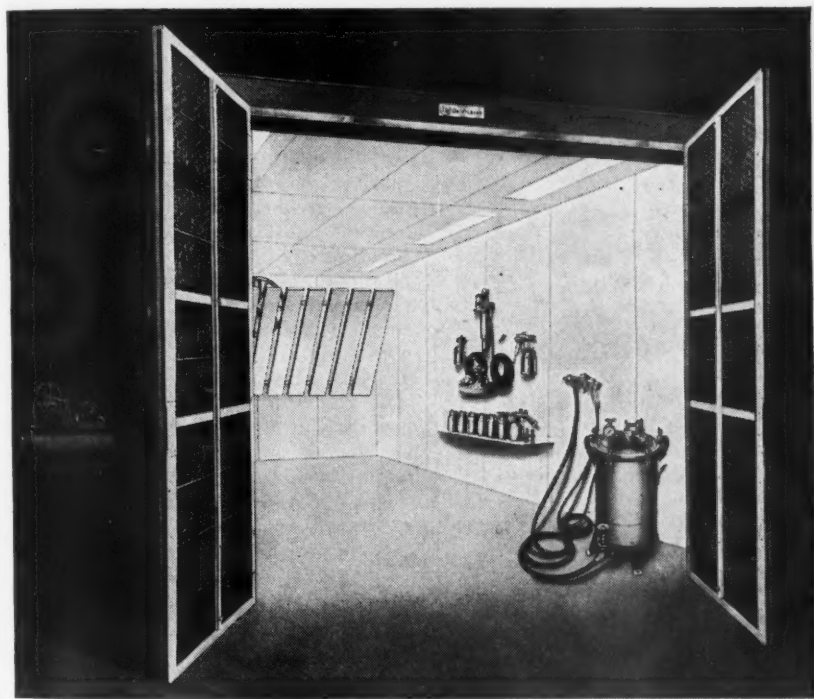


"I demand to see my lawyer!"

66% of All Cars Need Painting

HOW TO CORNER A LARGER SHARE of the Big Paint Job Market!

**THIS NEW, COMPLETE DEVILBISS PAINT SHOP WILL DO JOBS
FASTER, TURN THEM OUT BETTER AND DRAW NEW CUSTOMERS**



A modern DeVilbiss Paint Shop featuring the latest type of spray booth with filter doors and fluorescent lighting, a full range of specialized spray equipment for each type of paint job, and underbody coating equipment.

Here's the type of equipment that will pull the biggest share of today's enormous paint job market. It's a new and completely modern DeVilbiss Paint Shop with a bigger capacity for more business, more profit.

This new DeVilbiss Equipment will enable you to handle *all types* of paint jobs—from radiator core painting to complete car refinishing—and do *more* of them! It sets you up to get new and bigger profit from the increasing underbody coating business. There's all the newest spray equipment and the correct type for handling each job with greater ease, more speed, better workmanship and at lower cost.

With the big majority of cars in need of rust protection, the paint shop can be your most *profitable* service department—if you have this modern DeVilbiss Equipment. Ask your DeVilbiss Distributor for all the facts.

THE DEVILBISS COMPANY, Toledo 1, Ohio
Canadian Plant: Windsor, Ontario

DEVILBISS



means Quality in all four..

**SPRAY EQUIPMENT
EXHAUST SYSTEMS
AIR COMPRESSORS
HOSE & CONNECTIONS**

A. W. Herrington Succeeds Capt. Eddie Rickenbacker as Contest Board Chairman

Appointment of Arthur W. Herrington, Indianapolis, Ind., as Chairman of the A.A.A. Contest Board, succeeding Captain Eddie Rickenbacker who had held that post since 1927, was announced recently by H. J. Brunner, president of the American Automobile Association.

"It was with real regret," Brunner said, "that we accepted Captain Eddie's resignation. Under his leader-

ship for a period of nearly twenty years, the A.A.A. Contest Board achieved outstanding success in the supervision of automobile racing events, land speed trials, and the certified testing of automotive products. Because he has withdrawn from active participation in the sport through disposal of the Indianapolis Speedway, and because of the many problems with which he must deal in the

reconversion and expansion program of Eastern Air Lines, of which he is president and general manager, 'Rick' has found it impossible to continue the Contest Board chairmanship. The high standards governing the grueling and competitive sport of automobile racing are due in no small measure to the two decades of service Captain Eddie has given as chairman of the Contest Board.

"In obtaining the services of Mr. Herrington, we have been fortunate in securing a man whose long experience in the automotive and engineering fields qualifies him for the job of carrying out the expanded postwar program of the Contest Board. He has wide interests in the automotive and related industries; he is chairman of the board of the Marmon-Herrington Company, and is affiliated with other firms.

He designed several types of military trucks with four-wheel and six-wheel drive and also truck-laying tractors. He was technical adviser to Col. Louis Johnson, former Assistant Secretary of War, who in 1942 headed a special mission to India to study industrial possibilities for the U. S.

"Officially sanctioned automobile racing, discontinued during the war, is getting under way again with a heavy schedule of events highlighted by the 500-mile classic at Indianapolis on May 30. Wartime improvements in automotive engines, fuel, and oil, and new techniques in tire-building give promise that there will be new attacks on the land speed record in an attempt to better the time of John R. Cobb of England, whose Railton Red Lion was clocked at 369.7 miles per hour on the Bonneville Salt Flats in 1939. Many new products in the automotive field will be eligible for the Board's certified testing program.

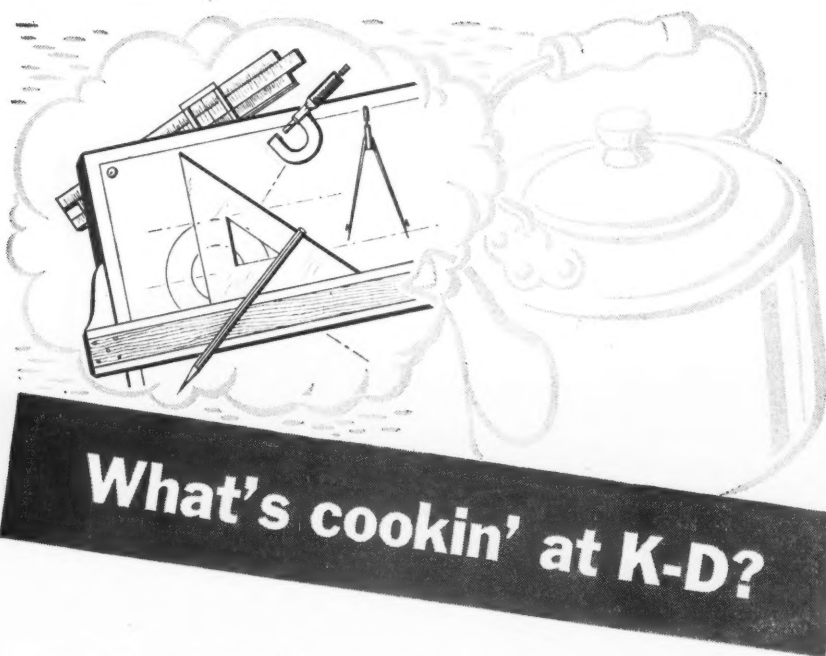
"The Contest Board faces a period of unprecedented activity and responsibility, and we in the A.A.A. are confident that it will successfully meet the challenges of the postwar era under the capable leadership of Art Herrington."

Parts Catalog Available

Now available to all persons servicing equipment manufactured by The Electric Auto-Lite Co. is the 1946 edition of the company's parts and service catalog, according to an announcement made by John A. Shank, Manager of the Parts and Service Division.

The 240-page catalog issued will replace the one published in 1941 and has complete parts listings for all makes of passenger and commercial vehicles.

Catalogs are available to all Auto-Lite service men through their local source of supply.



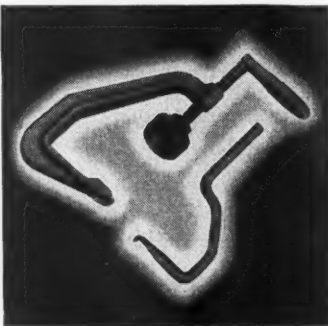
- Well, on the front burner, we are trying to satisfy your appetite for the old favorite K-D Tools . . . trying to fill the orders that had to wait 'til Uncle Sam's job was done. That's doing nicely.

- We're also cooking up some new stuff—stuff which was about ready to serve but had to be held over. That's coming along nicely, too. New K-D Tools to help you get your servicing jobs done easier . . . faster.

- And later, when the car manufacturers get up steam and there are new cars to service, you can look to K-D to serve you with the right tools for the new jobs.

ALREADY COOKED

Developed especially to pull valve guide assemblies in Ford-built motors no matter how tightly stuck. *K-D No. 920 Set* (917 Retainer Driver and 918 Puller, as shown) for all motors but 60 HP. Use 860 Set for 60 HP.



K-D TOOLS

The Hustlers for Your Toolbox!

K-D MANUFACTURING CO., LANCASTER, PA. AND HAMILTON, ONT.

The BIG things happen at Ford



THE Ford Motor Company views the future through a pair of \$200,000,000 glasses . . . not rose-colored, but realistic. That \$200,000,000 is the cost of the Ford expansion program . . . and it has as its objective the continuation of Ford leadership in automotive progress.

Among many other things, this vast expansion will be of direct and growing benefit to dealers. It will provide even more efficient new car distribution facilities and parts supply sources.

And thus, it will benefit Ford customers . . . for they will enjoy prompt, efficient, *complete* service, wherever they are, wherever they go.

HERE ARE SOME TANGIBLE SIGNS OF FORD EXPANSION



LOS ANGELES, CALIF.—Construction of Ford Motor Company's West Coast plant here for assembly of Lincoln and Mercury automobiles has already started. The plant has been designed for production of 250 automobiles daily. It will provide employment for 1,500 persons. A second Lincoln-Mercury plant is being built at Metuchen, N. J.

DENVER, COLO.—Construction of the Ford Motor Company's new sales distribution and parts branch building is under way. It is expected to be in operation this fall. This new plant will serve as a sales distribution center and parts supply source for Ford, Lincoln and Mercury cars and Ford trucks in the Denver territory.

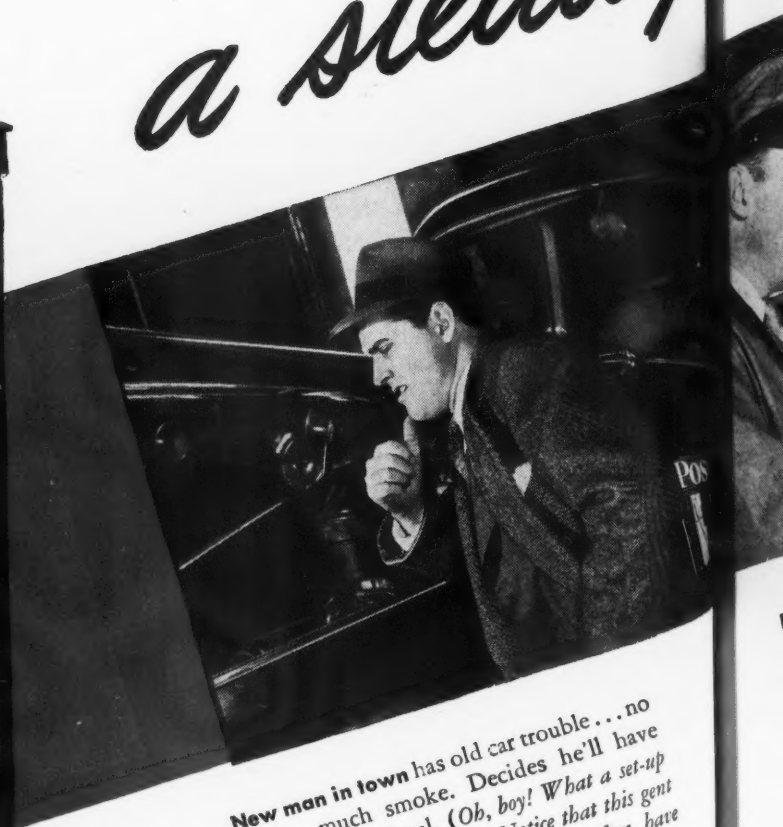
DES MOINES, IA.—Construction has started on the Ford Motor Company's new sales and parts branch in this city. It will serve as a sales distribution center for Ford, Lincoln and Mercury passenger cars, and will carry a complete line of passenger car and truck service parts.



FORD MOTOR COMPANY



*How to
a steady*



New man in town has old car trouble...no power, much smoke. Decides he'll have to get an overhaul. (Oh, boy! What a set-up for some smart garageman. Notice that this gent is a Post reader, and most Post readers have incomes well above average. He'd be nice to have as a steady customer.)

**IT PAYS TO
HAVE THE POST
PAVE THE WAY**

ring up
customer



Pulls into nearest garage and has car checked. Shop man says, "You need a ring job. We always use these." Name means quality to car owner because he's familiar with it through Post advertising. (A nation-wide survey asked, "In what ONE weekly magazine do you pay most attention to automotive advertising?" Car owners overwhelmingly named the Post.)

Though the gent doesn't know a gear from a gasket, he's sold; Post advertised rings indicate a first-class job. Later, when car performs well, garageman rings up a good steady customer. (No wonder, then, that again and again when jobbers ask dealers, "In which ONE weekly magazine would advertising on your products do you the most good?", up pops the Post more than any other magazines combined.)

THE SATURDAY EVENING
POST



South and Latin America Offer Big Car Market

South and Latin America have a potential demand of approximately 500,000 new vehicles providing a market that can only be filled between the next five to seven years by the car and parts manufacturers of the United States.

That is the opinion of R. C. Thompson, president of the Auto-Lite Export Co.

Thompson reported that a representative of Auto-Lite had recently returned from an extensive survey of

the automotive parts field of South and Latin America and reports that within the next five to seven years the automotive registrations on the continent will be increased approximately 50 per cent. Today there are about 1,000,000 vehicles on the road south of the border.

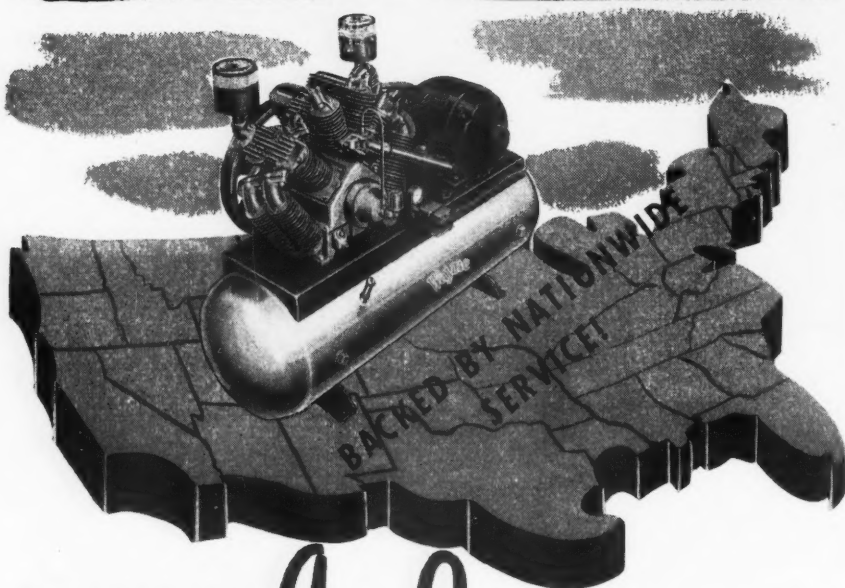
"At the present time," Mr. Thompson said, "the transportation situation in South America is not good as most of the vehicles are badly in need of repair and are an average of from 10-15 years in age. The use of gasoline substitutes during the war has injured electrical systems, motors and

batteries. The only bright item is tires.

"With the war over and exports of new vehicles beginning to trickle into their countries, South American officials are continuing their road building plans started for strategic reasons during the war. When these roads are completed you can expect a great increase in the demand for American-made vehicles of all types.

"As a matter of fact," Thompson concluded, "many American vehicle manufacturers are planning construction of assembly plants in South America in order to expedite the distribution of their products. Auto-Lite, of course, expects to obtain its full share of this new business."

PACKAGED Units of Power



WAYNE Air Compressors

ARE ALL WAYNE BUILT!



for your protection

WHEN you buy an Air Compressor from Wayne, you know it is backed by a responsible company with a Nation-wide Service Organization to assure your satisfaction. You get more air at less cost for power... for more years. Wayne builds a complete line from 1.4 to 40 c.f.m. Every two-stage unit is scientifically tested and its efficiency certified. Write today for Wayne Compressor catalog and prices.

THE WAYNE PUMP COMPANY
FORT WAYNE 4, INDIANA, U. S. A.

WAYNE AIR COMPRESSORS

GASOLINE PUMPS • CAR WASHERS • AIR SCALES • REELS • LIFTS

Olson Elected to Head Of "Whiz" Auto Division



The board of directors of R. M. Hollingshead Corp., Camden, N. J., manufacturers of automotive and household chemicals recently announced the election of L. M. Olson as vice presi-

dent in charge of the "Whiz" Automotive Division.

The directors also announced that T. J. Bagley, a vice president of the company, has been elected executive vice president. C. R. Ferris has been elected secretary, in addition to retaining his office as assistant treasurer.

Olson joined Hollingshead in 1925 as office manager of the St. Paul division. He later became credit manager of that division and was advanced successively to assistant branch manager, district manager, branch manager and midwest division manager. In 1939, he was transferred to the company's headquarters at Camden and assumed complete direction of sales of the "Whiz" Automotive Division.

Olson has been active in trade association affairs and is a member of the board of directors of the National Standard Parts Association.

New Spark Plug Catalog

A new 20-page spark plug catalog is being distributed by the Bowers Battery and Spark Plug Co., Reading, Pa. The latest edition exceeds former catalogs by 12 pages and contains recommendations for every type of spark plug use.

Heat range and comparison charts are included as well as recommendations for the correct setting of spark plug gaps and distributor points. Easy to find classifications make it a handy reference manual.



BIGGEST OIL FILTER PROGRAM IN HISTORY

to boost your Fram sales

Opening gun in the huge Fram advertising campaign, biggest in oil filter history, will be full page ads in the Saturday Evening Post, April 20 and Life, April 22. Look for them! This will be followed by other hard-hitting ads in the Post, Country Gentleman, Farm

Journal and other national magazines plus big smashing ads in thousands of daily and weekly newspapers, making a total of 334,200,000 individual ads featuring Fram oil filters and cartridges. Here's your chance to go to town on the Fram line and make real profits.



TIE IN . . . CASH IN!

Ask your Fram distributor about the powerful sales aids Fram offers. Stock up on the Fram line to meet big demands! Arrange to run tie-in ads of your own when the Fram ads appear in your local papers. Most important of all, show Fram ads to motorists and ask, "How's your oil filter?" It's the question that gets you under the hood for the Fram Dipstick Test. The Dipstick tells the story* . . . and builds big sales for you! Cash in with Fram . . . call your distributor today! FRAM CORPORATION, Providence 16, R. I. In Canada: J. C. Adams Co., Ltd., Toronto.

* Certain heavy-duty oils, due to the type of detergent additive used, will turn dark in color almost as soon as put into the motor. Where such oils are used, filters are more essential than ever before and cartridges must be changed more frequently. Follow the advice of your oil company.

FRAM HOW'S YOUR OIL FILTER?
The Dipstick Tells the Story!
Oil & Motor Cleaner
THE MODERN OIL FILTER



Stopper is

YOU BET I'm proud—proud because our new "deals" give you a quick, easy way to get into the brake service business—because they will label you as a brake specialist—because they will make you money!

Look 'em over. I say that you'll agree I *should* have my chest puffed out.

**A head start to a modern brake department
and greater brake lining profits**

American Brakeblok has Five Special Assortments

SPECIAL ASSORTMENT LINE-UP



DEAL No. 1—General purpose assortment of nine car sets and small size cabinet. Services 11 makes of cars.

DEAL No. 2—Nine set assortment for use on Ford, Chevrolet and Plymouth with small size cabinet.



DEAL No. 3—Eighteen set assortment for 11 makes of cars. Covers wider range of models than Deal No. 1. Medium size cabinet included.



DEAL No. 4—Popular roll assortment. Consists of the four most "in demand" roll linings (standard friction material). Covers requirements of a majority of passenger cars and light trucks. Deal includes large cabinet with door.



DEAL No. 5—Work bench and 45 car sets. Services 13 makes of vehicles—hundreds of models.

Write American Brakeblok or see your jobber for complete information and prices. Please identify deals by number.

American Brakeblok

BRAKE LINING

proud as a peacock!

that will help departmentalize your brake service. This is the kind of help that pays off in profits.

The assortments consist of popular car sets and roll lining. To complete the "deals," a trim metal cabinet or a rugged steel work bench is included with each assortment and is shipped to you with the lining. There are three sizes of cabinets. They may be used alone or in combinations with other cabinets and the bench.

Here's *value* worth talking about!

The bench and cabinets are functional—built for long, hard use. The cabinets furnish convenient storage for car sets and roll lining. And they make a display that labels you as a *brake specialist*.

The bench is really a *work* bench—with plenty of storage space for lining and handy hooks for tools.

Here is a quick, common-sense way to a modern brake department. Select the assortments that answer your requirements. Arrange the cabinets or bench to suit yourself. As your brake department grows you can order additional assortments and build up your brake service center a unit at a time.

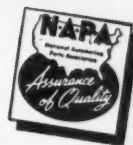
American Brakeblok's Special Assortments are the backbone of an efficient brake department. So, here is a head start to greater profits from brake service.

Decide *now* on the best assortments for your shop!

This complete brake department is made from Deal No. 5 combined with two each of Deals No. 1, No. 3 and No. 4.



You may order any combination of deals—any number of the same deal. Cabinets and bench combine to make a wide variety of attractive displays—and a *unified brake service center* for your shop.



Master stocks at 38 NAPA warehouses, serving thousands of jobbers.

Legally Speaking

A lawyer's interpretation of federal and local court decisions of interest to repairmen and car dealers

Oral Promises

WHEN a repairman buys an item of equipment sold to him under a written contract, he is entitled to receive only what the written agreement specifies, and not what may have been

represented to him orally before the contract was signed. The law says that all the oral promises and statements are meaningless once the written contract is signed because the written document itself shows what the parties finally agreed on.

WARNER NATIONAL ADVERTISING IS

TIMED FOR YOUR

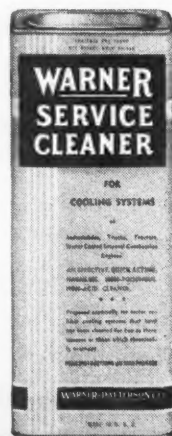
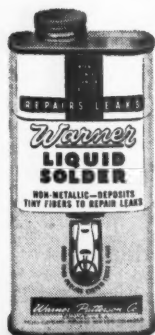
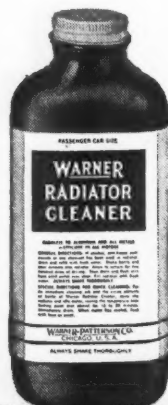
SPRING DRIVE

Here are just a couple in a series of ads scheduled to appear in Collier's, April through June. Nearly 15 million readers . . . many of them your customers . . . will be reminded that Spring is time for *complete* Cooling System Service with Warner products. It's your opportunity to cash in on Cooling System Service profits!

REMEMBER—WARNER RADIATOR CLEANER quickly removes rust and scale of hard winter driving—WARNER LIQUID SOLDER deposits tiny non-metallic fibers to repair leaks anywhere in cooling system—WARNER SERVICE CLEANER for trucks, heavy or badly neglected motors—WARNER COOLING SYSTEM PROTECTOR to prevent rust and corrosion damage to delicate parts, to keep cooling system *clean*.



WARNER-PATTERSON COMPANY
920 S. MICHIGAN AVENUE, CHICAGO 5, ILL.



WARNER COOLING SYSTEM COMPOUNDS

Every "drive-in" is a prospect for Warner Products. Sell 'em all!

STANDARD OF PROTECTION FOR MORE THAN 25 YEARS
Copyright 1946, Warner-Patterson Co

That point was brought out in a recent Oklahoma case in which the buyer of an industrial machine was sued for the balance of the purchase price. The machine was sold to the buyer under a written contract, but he contended that the machine did not come up to the promises and representations made to him by the seller before the contract was signed. The buyer wanted to prove that such promises had been made, but he was not permitted to offer his evidence in court.

"The buyer by the offered evidence sought to prove that prior to the execution of the written contract oral representations and statements were made by the seller, whereby the seller agreed to construct a machine materially different from the machine mentioned and described in the written contract," said the Oklahoma court. "The evidence offered tended to vary, contradict and impeach the terms of the written contract. For that reason it cannot be admitted.

"The execution of a contract in writing, whether or not the law requires it to be written, cancels all oral negotiations or stipulations concerning the subject matter which preceded or accompanied the signing of the paper, unless there is fraud, accident or mistake of fact. Any representation made before, or at the time of the signing of the written contract, is inadmissible to contradict, change, or add to the terms plainly incorporated into and made a part of the written contract."

In other words, a repairman who makes a written contract that results in dissatisfaction will not even be permitted to prove the oral promises made to him before he signed the contract. The fact that a dozen witnesses besides himself heard the oral promises makes no difference. (*Goldstein vs. Welded*, 164 *Pacific Reporter*, second series, 229.)

Employee or Independent Contractor?

A REPAIRMAN may turn over certain jobs to someone on a contract basis without hiring him as an employee. Making a deal with a painter to paint the shop, or with a carpenter to repair the building for a stipulated price, are typical examples.

Trouble for repairman in these transactions arises when the painter, carpenter or other workman hurts a third party or damages his property in the course of doing the job. If the workman is technically the repairman's employee, the repairman must pay for the injury inflicted or the damage done. If, however, the workman is an independent contractor, the repairman has no responsibility for anything he does to other persons or their property.

A New Hampshire court recently
(Continued on page 112)



BRAKES CAN'T FREEZE

IF THEY'RE ALL HYDRAULIC



HYCON

Compound CYLINDER

Eliminates brake lag . . . improves safety factor . . . simple and quick to install . . . cuts tire wear and fuel consumption . . . reduces maintenance.

There's nothing to freeze in a HYCON Brake, because it's *all-hydraulic*—no vacuum or air in its operation. Moisture in air tends to condense in "booster" cylinders. When the temperature drops, it freezes. The hydraulic fluid used in *HYCON Brakes will flow freely at sub-zero temperatures.* HYCON hydraulic power is continuous and needs no "boost" from vacuum or air or any other means. The secret is a *second* piston contained in the compound cylinder itself.

Positive braking control reduces skidding and tire-scutting

When trucks skid on icy roads, blame the brakes. When wheels lock and slide the tires, blame the brakes. Without *positive control*, brakes grip harder than the driver intends. HYCON Brakes deliver braking pressures in correct proportion to pedal pressures, because they are 100% hydraulic.

Install and Compare

For savings in gasoline consumption, tire mileage, cost of installation and maintenance, *send for a Demonstrator Unit.* Now available to replace 1 1/4" and 1 1/2" Di. original equipment master cylinder. Order from your local power brake distributor, or write direct to The New York Air Brake Company, 420 Lexington Ave., New York 17, N. Y.

Look for this Registered Trade Mark



THE NEW YORK AIR BRAKE COMPANY

420 Lexington Avenue, New York 17, New York

*Your NAPA Jobber
is a Good Man to Know!*

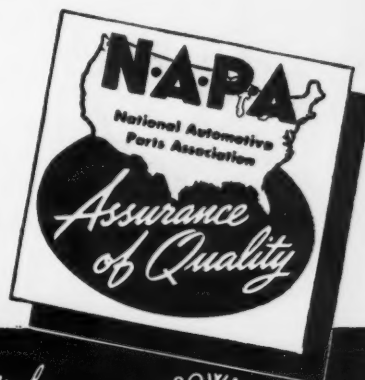
NATIONAL AUTOMOTIVE PARTS ASSOCIATION • DETROIT 1, MICHIGAN

Across the Nation

—your NAPA Jobber (like every NAPA Jobber) has ready for you the same trusted lines—the same superior service. Every NAPA Jobber has the advantage of an organized system of supply and operation, which simplifies his problems—gives him more time to help you with yours. He is part of the largest independent parts organization in the industry—yet wherever you may be, you'll find him just as friendly and cooperative as the corner drug store, because he's an independent business man, working to get ahead by giving you the fastest and finest service on parts for all makes of cars, trucks, tractors.

NAPA

is the largest Independent Parts Organization in the Industry!



American Brakeblok
BRAKE LINING • CLUTCH FACINGS
FAN BELTS • RADIATOR HOSE

Allied WISCONSIN
PISTONS • SLEEVES

Spicer
UNIVERSAL JOINTS

MONMOUTH PRODUCTS
ENGINE BEARINGS
CLUTCH PARTS
BOLTS AND BUSHINGS

TRICO
VACUUM OPERATED
SAFETY PRODUCTS

Allied GRAPHO
WATER PUMPS
PARTS • PACKING

BROWN LIFE
GEAR BOXES
BALKAMP
PARTS FOR FORD
CHEVROLET, PLYMOUTH

DITTMER
TRANSMISSION GEARS
PURITAN
BRAKE FLUID

Allied RAYMOND
VALVE SPRINGS

RARITAN
ROLLER BEARINGS

MARTIN-SENOUR
AUTOMOTIVE FINISHES

New Britain
HAND TOOLS

Belden
WIRE AND CABLE

STANDARD
GREASE RETAINERS

Allied A.P.C.
VALVES

DOUBLE DIAMOND
FLYWHEEL GEARS

DETROIT
UNIVERSAL JOINTS

Allied CELORON
TIMING GEARS

PRECISION
PISTON PINS
FEDERAL
BALL BEARINGS

DUCKWORTH
TIMING GEARS

UNITED
PARTS FOR
HYDRAULIC BRAKES
FUEL PUMPS

Legally Speaking

(Continued from page 108)

defined an "independent contractor" in these words:

"An independent contractor is a person who, in the pursuit of an independent business, undertakes to do a specific work for other persons, using his own means and methods, without submitting himself to their control in respect to all its details. The true test of a contractor would seem to be that he renders service in

the course of an independent occupation, representing the will of his employer only as to the result of his work and not as to the means by which it is accomplished."

It is the close, detailed supervision and control of a workman's performance that distinguishes the employee from the independent contractor. The employee is responsible to the boss for when, where and how he does his

work, while the independent contractor is responsible only for results. (*Dugas vs. Nashua*, 62 Federal Supplement 846.)

Payment by Third Person

A FAVORITE device of some debtors is to send the repairman a check for a sum less than the amount owing and mark the check "In full payment of all obligations" or with some similar notation indicating payment in full. If there has been no dispute about the amount owing and the true amount of the debt is fixed and not open to question, the repairman may cash the check so marked and proceed against the debtor for the unpaid balance. A debtor cannot get rid of a fixed and undisputed obligation of \$100, for example, by paying \$50.

But suppose the debtor's father or other relative or friend comes to the repairman and says: "I know my son (or friend) owes you \$100, but he is unable to pay it. I'll pay you \$50 now to settle the whole thing."

If the repairman accepts the \$50 thus offered him by a third party, the debtor is discharged of his entire obligation, even though there has been no dispute about the bill. This is because the repairman receives the money from a third person and not from the debtor himself.

"Payment by a third person of a sum less than the amount due, with the understanding that it shall be in full satisfaction thereof, is a valid accord and satisfaction, and no action will lie against the debtor to recover the balance," says the Supreme Court of Nebraska in a recent case. "In such a case there is a new consideration from a new party, and the general rule that the payment of a smaller sum is not a good accord and satisfaction of a larger one does not apply." (*Gordon vs. Young*, 20 Northwestern Reporter, second series, 616.)

(Continued on page 120)

Work Started on Ford Parts Branch in Texas

Construction of the Ford Motor Company's new sales distribution and parts branch building in Houston, Texas, is under way, J. R. Davis, director of sales and advertising announced.

The plant, one of several being built in the company's \$200,000,000 expansion program, is expected to be in operation this fall.

The building will serve as a sales distribution center for Ford, Mercury and Lincoln passenger cars and Ford trucks. In addition it will supply a complete line of passenger car and truck service parts and accessories to dealers in 98 counties of South Texas, the Rio Grande Valley, and such metropolitan areas as San Antonio, Austin, Del Rio, Beaumont and Corpus Christi.

BUNDYFLEX RIGID METAL HYDRAULIC BRAKE LINES

Original Equipment on Every Car and Truck
Made in the United States in Recent Years

ATTRACTIVE METAL SIGN AND
RACK FREE WITH EACH ASSORTMENT

90% OF ALL
REPLACEMENTS

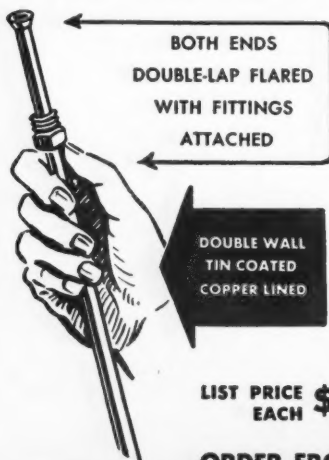
of Rigid Metal Brake Lines
can be made from this

NEW No. 475 FAST SELLING
DEALERS DISPLAY ASSORTMENT

No more uncertainty and extra work on rigid brake line replacement jobs, thanks to BUNDY-FLEX ready-to-install lines. No more hunting for right tubing or fittings; no more tube cutting or flaring. It's easier and faster to duplicate the original installation from this assortment. Con-

tains 4 each of 6 popular numbers that fit 90% of all cars, trucks, buses, tractors, etc. Complete with sign and rack.

Extra long lines easily made with EVERHOT 300C 1/4" x 1/4" inverted flare union.



BOTH ENDS
DOUBLE-LAP FLARED
WITH FITTINGS
ATTACHED

DOUBLE WALL
TIN COATED
COPPER LINED

LIST PRICE
EACH \$1480

DEALER PRICE
EACH \$985

ORDER FROM YOUR JOBBER TODAY

EVERHOT PRODUCTS CO.

2055-59 W. CARROLL AVE., CHICAGO 12, ILLINOIS
1511 W. SEVENTH ST., LOS ANGELES 14, CALIFORNIA

RUGGED DEPENDABILITY

throughout a long, long life



WILLARD BATTERIES—Automobile • Truck and Bus • Radio • Motorcycle • Tractor Aircraft • Marine • Diesel • Stationary
Sold and serviced by Willard Dealers everywhere.

"SAFETY-FILL"
BATTERIES
Willard

Dependability • Performance • Long Life

WILLARD STORAGE BATTERY CO. • CLEVELAND • LOS ANGELES • DALLAS • TORONTO

Studebaker Announces New Trucks And Operation of New Plant

Two important pieces of commercial car news came from The Studebaker Corp. this month.

The first was an announcement of 1946 models in the light and medium truck fields. In the second, the company disclosed that it has put into operation a new \$1,500,000 cab and pick-up body factory that considerably increases production facilities.

Highspotted by new versions of

Studebaker's popular Coupe Expresses, the 1946 series includes half-ton, one ton, and one and one-half ton sizes in a variety of pick-up, stake and cab and chassis models. According to R. G. Hudson, manager of the truck division, each reflects advances in mechanics and manufacturing. Details of the line follow:

HALF-TON—The Coupe Express pick-up. Powered by the six-cylinder

Econ-o-miser engine, which proved its worth in the wartime Studebaker Weasel, this vehicle has a maximum gross rating of 4,500 pounds with 6.50x16 six-ply tires. The pick-up body measures 78 3/16 inches by 48 1/2 inches, the extra half-inch in width facilitating the loading of materials of exact 12-inch dimensions.

Special emphasis is placed on driver comfort and convenience. Easy riding, two-stage rear springs and shock absorbers are standard. The V-type windshield is big, with dual wipers and visors. Other cab features list rotary door latches, extra-wide seat, hood lock control, door lock, cowl ventilator, ventilating wings, adjustable seat cushion and back, defroster vents, arm rests, dome light, radio opening and package compartment, safety glass throughout and outside rear view mirror.

Chassis and engine specifications include such features as automatic choke, shockless steering, seven-inch frame, handbrake on rear wheels, Hotchkiss drive, hypoid rear axle, octane selector and aluminum alloy tin-plated pistons.

An overdrive transmission with steering post gear shift lever is available along with an optional four-speed transmission. Other options include hill holder, dual horns, rear bumper, heater and radio.

ONE-TON—Pick-up and stake models. The Coupe Express pick-up model carries an eight-foot body and the stake model, having a longer wheelbase, a nine-foot body. Gross vehicle ratings are 7,800 pounds and 10,000 pounds respectively.

Both units are powered by the Econ-o-miser engine and equipped with heavy duty, full floating axles. The all steel, three-man cabs have the same comfort features as the half-ton pick-up. The stake model has auxiliary rear springs and the pick-up has shock absorbers as standard chassis features.

ONE AND ONE-HALF TON—A choice of three wheelbases with a maximum gross rating of 13,500 pounds when supplied with standard heavy-duty rear axle and 15,000 pounds when supplied with optional two-speed rear axle with power shift. In tractor-trailer service the maximum gross ratings are 22,000 pounds and 24,000 pounds respectively.

The M16-28 takes a nine-foot body, the M16-52 a twelve-foot body and the M16-95 an eighteen to twenty-foot school bus body.

Appointment Announced

Joseph L. Focht has been appointed comptroller of Purolator Products, Inc., manufacturers of Oil Filters, Newark, N. J., it was announced by Ralph R. Layte, President. He is a member of Controllers Institute of America, National Association of Cost Accountants, and the Institute of Internal Auditors.

1-2-3-4!

HYDRAULIC BRAKE SERVICE *Goes Faster* WITH UNITED PARTS!

2



WHEEL CYLINDER KITS
Sixteen United Kits make quick work of wheel cylinder repairs on 90% of all jobs. Also complete range of individual parts.

1



MASTER CYLINDER KITS
Eleven United Kits provide parts needed to service 90% of all master cylinders. Complete with pistons! Full line of individual parts as well.

4



STOP-LITE SWITCHES
Underwriter's approved types for all makes and models.

3



BRAKE HOSE
Guaranteed to withstand 5000 lbs. pressure. Non-leak, non-breakable fittings. Types and sizes for all needs.

All United Parts are skillfully engineered ... precision made. Fast delivery from your NAPA jobber. United Parts Mfg. Co., 1250 W. Van Buren St., Chicago 7.



UNITED PARTS



HYDRAULIC BRAKE PARTS • BRAKE CABLES
SPEEDOMETER CABLES & CASINGS • FUEL & VACUUM PUMP PARTS

ALL MAKES...
ALL RATINGS...
ALL CLIMATES...

AUTOCAR

BROCKWAY • CHEVROLET

CORBITT • DIAMOND T

DODGE • DUPLEX • FDW

FEDERAL • FORD • GMC

HUDSON • INTERNATIONAL

KENWORTH • MARMON

HESS • OSHKOSH • REO

STEWART • STUDEBAKER

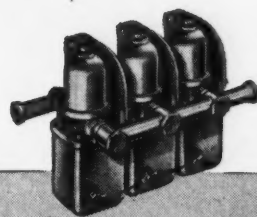
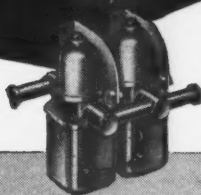
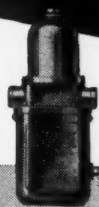
TRUCKSTELL

WALTER

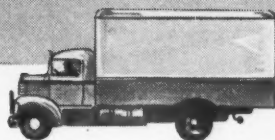
WARD

BUT JUST *One*
**UNIVERSAL
 FUEL PUMP**

will serve them all



AUTOPULSE



Standardize on Autopulse Electric Fuel Pumps

For All Your Vehicles • Trucks • Passenger Cars • Busses • Tractors

Save Time • Save Money • Eliminate tie-ups

Write us direct for quotation

AUTOPULSE *Corporation*

2321 Brooklyn Ave., Detroit 1, Michigan

Foreign Entries Likely In Indianapolis Classic

Although no official foreign entries have been received, inquiries made by the outstanding pilots of five European countries indicate that the post-war renewal of the 500-mile automobile classic at the Indianapolis Motor Speedway next May 30 will have a distinct international atmosphere.

In spite of financial and transportation problems, the leading drivers of England, France, Holland, Switzerland and Italy are making every effort to reach Indianapolis in time to bid

for the major portion of the \$100,000 prize fund.

Tazio Nuvolari of Italy, who was on hand for the 1939 race here as a spectator, and Luigi Villorresi have new Maserati racers at their disposal and are hopeful of joining forces with a prominent American pilot to form a three-car team for the May 30 classic.

Harry O'Reilly Schell has had considerable correspondence with Speedway officials on behalf of French drivers.

"Eric Verkade of Holland appears to be the most likely foreign entry at the present time, however," assert-

ed Wilbur Shaw. "Verkade already has entered his Maserati in a race at Nice, France.

Baron E. DeGraffenreid and C. Basadonna, from Switzerland, are investigating the possibility of making the trip to Indianapolis. Juan Aymenrich is interested in bringing his Alfa Romeo from London.

Many problems still remain to be solved before the foreign cars are entered officially, but at least some of them are expected to compete here this year against a field of approximately 50 American pilots. The entry list at the present time consists of 10 cars. The deadline is May 1.

Easy as



to COVER ALL 3 MAJOR IGNITION SYSTEMS with Just ONE NIEHOFF Service Stock

Because—one catalog with a single code identifies parts quickly . . . the prominent, easy-to-read code numbers on boxes and cabinet speed up parts selection . . . the engineering of all parts to standard industrial tolerances, or better, insures high mechanical efficiency . . . the rigid inspection at the factory is your guarantee of uniform quality and performance. In addition, these cabinets provide the most up-to-date method of stock control that keeps ignition stock at service levels.

Ask your Jobber today.

C. E. NIEHOFF & CO.

4925 Lawrence Ave., Chicago 30, Ill.

BRANCHES: 1342 S. Flower St., Los Angeles 15, Calif.
230 W. 34th St., New York 19, N. Y.



- One Stock
- One Catalog
- One Code
- One Order

NIEHOFF

APPROVED QUALITY PRODUCTS

Fram Appointment Named

Spencer A. Ware is expanding his already extensive contacts in the automotive field from a new desk, that of sales manager of the original equipment division of the Fram Corp., Providence, R. I.

Closing his desk in the automotive division of the War Production Board at the end of 1945, where he also served on the Board of the Heavy Duty Truck Integration Committee, he assumed his new duties with Fram on Feb. 1 of this year.

Ware already is building a staff to aid him in furthering the distribution of Fram Oil and Motor Cleaners.

His experience in the automotive field dates back to the early '20's and the famous Locomobile days when he served as that company's manager in the Newark, N. J., district. Successively he assumed the district managerships for Ford, Chrysler and Willys-Overland.

J. Donald Roach

It was with great sorrow that friends in the automotive service industry learned of the death of J. Donald Roach, Grey-Rock Service Engineer, on March 19 at his home in Silver Springs, Pa., near Lancaster. He was 44 years old.

Don, as he was known by practically every one with whom he had contact, was a native of Philadelphia.

He became associated with United States Asbestos Division in January, 1933, as special representative of the Commercial Transportation Department. In 1940, he was called into headquarters at Manheim to assume greater responsibility.

His knowledge of brakes and brake systems quickly established him as an authority and he was widely known throughout the replacement industry. He was a member of the Society of Automotive Engineers and has served on Technical and Data Book Committees of the Brake Lining Manufacturers Association.

He is survived by his wife, Mabel Robinson Roach, and three children, J. Donald Jr., Emmy, Lou and Mary Elizabeth.

Skid uses glue because



he doesn't know

GRAFILD
BRAKE LININGS

will stop 'em!

But you can give your customers real brake service by sticking to GRAFILD. There's no surer way to end slipshod, slap happy stops. GRAFILD stops are noiseless and jostle-free. Get in line—reline with GRAFILD.

WORLD BESTOS CORP.
PATERSON • NEW JERSEY

Electric Auto-Lite Corp. Leases Ohio War Plant

Authorized lease of the Government-owned war plant at Kings Mills, Ohio to the Electric Auto-Lite Corp., Toledo, Ohio, for a 5-year period at \$50,000 annual rental, subject to priority right of Federal Government Agencies, was announced late last month by the War Assets Corp.

The plant, constructed by the U. S. Army Corps of Engineers, in 1942, was operated by the General Motors Corp., Delco-Remy Division, during the war. It produced 30 and 50 caliber

small arms ammunition, and upon completion of Army requirements was converted in 1944 under Navy sponsorship to the manufacture of electric starting motors for Diesel engines.

Involved in the lease is approximately 110 acres of land on which the several principal buildings of wood construction occupy a total of approximately 163,400 sq. ft. The one-story main manufacturing building contains approximately 101,000 sq. ft. of floor space. The Government's investment in land and buildings amounts to approximately \$3,350,000. Electric Auto-Lite plans to use the

plant in expanding its facilities for the manufacture of automobile lighting systems and equipment in which an employment of approximately 1,000 workers was indicated.

Machinery and equipment which cost the Government approximately \$1,189,000 has been purchased by General Motors Corp., Delco-Remy Division, and is being removed from the plant at General Motors' expense.

Hollingshead Adds \$2,500 To 500-Mile Race Purse

A purse of \$2,500 added prize money for the Indianapolis 500-mile Automobile Sweepstakes to be revived next Memorial Day was presented recently to Ted Allen, of the American Automobile Association, by L. M. Olson, vice president in charge of "Whiz" automotive division, R. M. Hollingshead Corp., Camden, N. J.

Posting of the purse makes the Hollingshead Corp. the first manufacturer to announce support of the National Championship Prize Fund of the American Automobile Association for the 1946 auto racing classic. The last running of the Indianapolis 500-mile event was in 1941, the war having stopped racing competition for the past 5 years.

Philco to Produce Auto Radio-Telephones

Philco Corp. plans to produce and sell a complete line of mobile radio-telephone equipment to provide dial telephone service in automobiles, trucks, buses and taxicabs as well as police and fire equipment, it was announced (recently) by John Ballantyne, president.

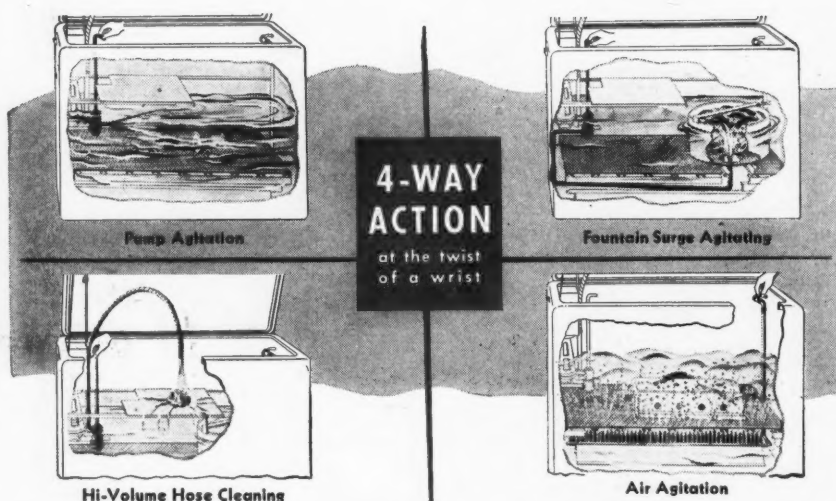
"Incorporating the Philco Advanced FM system and FM 1000 seven-element vacuum tube, this mobile radio-telephone equipment will include many other important research developments in the field of electronics," Mr. Ballantyne said.

"It is expected that with this equipment and the proper central station installations, the average motorist, bus, truck or taxi driver will be able to call his home or office, while driving along the highway, merely dialing the correct number.

U.S. Axle Co. Issues Silver Anniversary Catalog

The Silver Anniversary Catalog of The U. S. Axle Co. Inc., Pottstown, Pa., has recently been released. Its 50 pages contain complete passenger car, truck, and bus listings as well as master listings for replacement with axles and propeller shafts made by the company. The listings cover all vehicles and in some cases go back as far as 1910. A complimentary copy will be sent upon request.

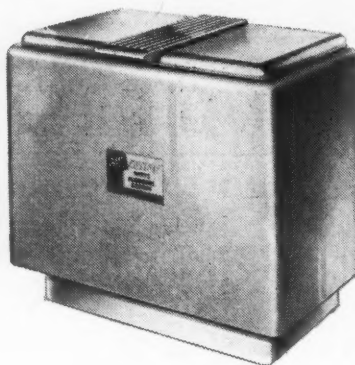
Here's how to DECREASE CLEANING TIME for MORE PROFIT TIME



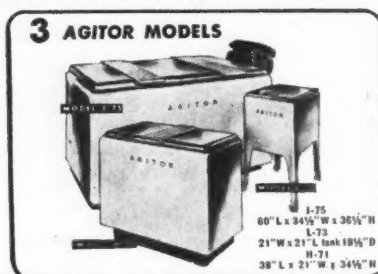
GRAY-MILLS AGITOR PARTS CLEANING SYSTEM

Users of this new, safe cold cleaning method report faster cleaning...more profit time...improved shop appearance...elimination of messy, old-fashioned cleaning in buckets and pans...better precision workmanship...faster reassembling...and complete customer satisfaction.

No heating problems, with an AGITOR. 4-Way Action of Model H-71 fits every automotive cleaning task.



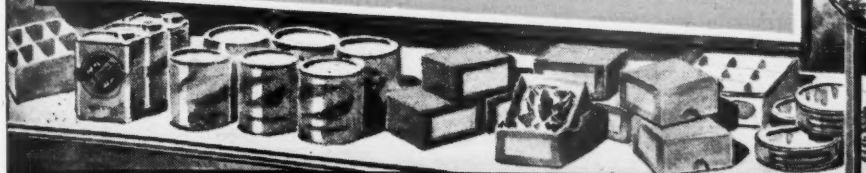
GRAY-MILLS CORPORATION, 1943 Ridge Avenue, Evanston, Ill.



Gray-Mills Corporation, Evanston, Illinois
Please send catalog on Agitor Parts Cleaning Systems.

Name _____
Position _____
Company _____
Address _____
City _____ State _____

"PRECISION PARTS MAKE MOTORS PERK
BRING BETTER PROFITS FROM BETTER WORK"
KING QUALITY



KING QUALITY

"Building for the future on a 25 year record"
ST. LOUIS 10, MO., U.S.A.

PISTON RINGS • PISTONS • PINS • VALVES
BOLTS • BUSHINGS • SILENT-U SHACKLES



BEARINGS • WATER PUMP PARTS
SLEEVES • WHEEL SUSPENSION PARTS

Legally Speaking

(Continued from page 112)

Extension of Time

ORDINARILY a repairman feels that he may rely upon an extension of time allowed him by a creditor for the payment of a bill. Similarly, a repairman's customer is apt to rely upon additional time granted by the repairman for the payment of an account.

Actually, such extensions of time have no standing in the law unless

supported by what the law calls a "consideration." Thus, if a bill is due and payable on the first of the month, and the creditor tells the debtor he may have another thirty days within which to pay it, there is nothing to stop the creditor from suing the debtor for the money the very next day regardless of the extension of time.

A rather startling illustration of this principle was given in a recent

Georgia case. There the buyer of an automobile on installment payments arranged with the seller for an extension of time for the payment of installments. This extension was granted by a formal, written extension agreement entered into between the parties. The extension agreement, however, was without legal "consideration" and for that reason may have been unenforceable. However, the buyer went ahead with his payments under the extension agreement but was late in making several successive payments, even under the delayed dates as set forth in the extension agreement. The contract of sale and the extension agreement contained a provision to the effect that if one installment was paid late, the full amount of the contract became immediately due and payable.

After the payment of several installments beyond the deferred dates set forth in the extension agreement, the seller demanded the full unpaid balance and when this was not forthcoming, repossessed the car. At the subsequent suit by the buyer against the seller, it was urged that as the seller had accepted late payments, he should at least have given the buyer reasonable notice of his intention to enforce the strict terms of the contract. The court thought otherwise, saying:

"The mere extension of time of payments or mere indulgences would not affect the rights of the seller to enforce the contract at any time unless a consideration was paid for such extension or indulgence. Since the whole debt was due before his delayed payment was made, the acceptance of the past due payments was a matter of mere indulgence for which no consideration was paid and did not prevent the seller from action on the contract at any time after the whole debt became automatically due, in the absence of the payment of the debt in full."

This simply means that the extension of time for payment is a mere accommodation or indulgence on the part of a creditor, and the creditor cannot be held to such promise unless

(Continued on page 122)



Look Closely..

at the record behind the SERCO Line! Automotive chemicals perfected thru 16 years of laboratory experimentation and actual driving conditions. Dealers and jobbers, all over the world, are ringing up profits with the Serco line.

SPRING-TIME IS NOXO SELLING-TIME

NOXO removes winter sludge, lubricates upper cylinder walls, releases sticky valves and gives your customer's car a new lease on life. NOXO is easy to use and works fast (a complete job of NOXOVATING takes less than one-half hour) and the results are immediate... easier starting, smoother running, more pep and power, a quieter motor that uses LESS gas.



Service Supply Co.

1115 SEVENTH ST. • DENVER 4, COLO.

*An enlarged "pin-up" of the SERCO Girl above, mailed FREE on request. Order by number.

New Grinder Announced

The Baldor Electric Co. announces an improved 6 in. grinder, No. 62. This grinder, according to the manufacturer, is powered with a capacitor type motor which will not burn out even though it is repeatedly overloaded. This grinder has tapered end bells providing wide clearance between the wheels and the motor frame and is equipped with wheels 6 in. in diameter, 5/8 in. wide. For further information, write the Baldor Electric Co., St. Louis, Missouri, for bulletin No. 321-A.



BARRETT
SAYS:

DON'T GET CAUGHT WITH YOUR SUPPLIES DOWN...!

Be Prepared for the Police Traffic Safety Check, May 15th

One out of every seven cars didn't pass last year. Cars are older—there will be more this year!

Fill in your stock of brake lining and order these important brake service supplies today!

NON-COMPRESSIBLE SHIM STOCK



The finest hard vulcanized brake lining shim material available. All sizes in stock. Order quickly before stocks are depleted.

HYDRAULIC NO-GO GAUGE SET



Don't guess! Be sure hydraulic master and wheel cylinders are not already too large. Play safe by checking before installing new parts.

Set B-150 for Passenger Cars
Set B-151 for Cars, Trucks and Buses

BRAKE LINING FILLER AND CEMENT

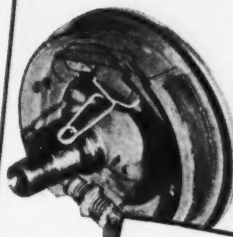


New Formula—Contains asbestos and graphite—water soluble—dries brick-hard—will not crumble. Furnished in Pints, Quarts and Gallons.



BRAKE SHOE ANVIL

A thousand uses in the brake department.
Order No. B-18



SPRING TYPE CYLINDER CLAMPS

Spring clamp type.
Order Set No. B-175

HYDRAULIC CYLINDER CLAMPS



Sliding clamp type with extra long bolt.
Order Set No. B-174



CARBOLAY LATHE CUTTERS*

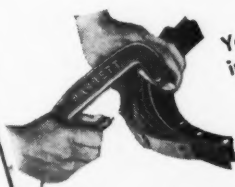
Check your supply of brake drum lathe cutting tools. Order No. 43 for cast iron drums and No. 46 for steel drums.



BARRETT CARBOLOY TIPPED COUNTERSINKS

For all brake relining machines. When ordering, specify size and make of reliner.

BRAKE LINING CLAMPS



Your best buy in lining clamps.
Order B-130, Standard Passenger Car Set
B-131, De Luxe Passenger Car Set
B-132, Truck and Bus Set

GET PROMPT SHIPMENT ON ALL ITEMS.
ORDER FROM YOUR
JOBBER NOW!

*Do your lathe cutters need sharpening or reconditioning? Send them to us by parcel post for prompt service. The cost is very low.

BARRETT EQUIPMENT CO.

The World's Finest Brake Service Equipment
TWENTY-FIRST AND CASS • ST. LOUIS 6, MO.

BARRETT EQUIPMENT COMPANY
21st and Cass, St. Louis 6, Mo.

Please send catalog, prices and other information about Barrett Brake Service Equipment.

Company _____

Address _____

City _____ State _____

Signed _____

Legally Speaking

(Continued from page 120)

he receives some "consideration" from the debtor for the extension. The consideration might be the payment by the debtor of \$100 for the extension, or the promise to make such a payment or the doing of anything by the debtor for the benefit of the creditor in addition to the payment of the actual amount of the debt. (*Monk vs. General Motors Acceptance Corporation*, 193 *South Eastern Reporter*, 466).

Self-Locking Hydraulic Brake Cylinder Clamps

Self-Locking Hydraulic brake cylinder clamps are the latest addition to the line of Murray automotive products.

The manufacturers claim that the use of these clamps when relining brakes, completely eliminates the possibility of accidental blowing out of the brake cylinder pistons, and, subsequently, bleeding operations are avoided.

Detailed information may be obtained by writing to Murray Corp., Towson 4, Maryland.

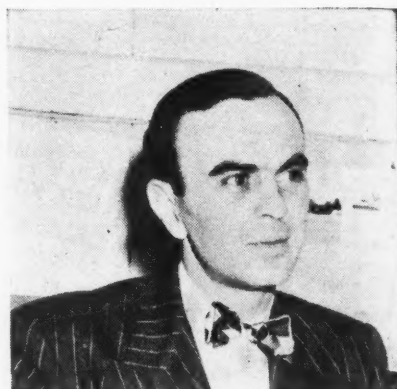
Maremont Announces New Display Rack

Maremont Automotive Products, Inc., So. Ashland and 16th St., Chicago 8, Ill., has recently announced the availability of a new muffler stocking and display rack for dealers. This rack, compactly and sturdily built, is designed to fit in any handy location in the service shop.

Occupying only 30 in. x 30 in. of floor space and forty-eight inches high, it can be placed in any convenient location in grease bay or waiting room. It is designed to hold 16 to 18 of the fastest selling mufflers.

Appointment Announced

Thermoid Co., Trenton, N. J., announces the appointment of H. C. Anderson as director of research.



Mr. Anderson, a chemical engineering graduate of Iowa State College, was formerly with The Flintkote Co., Chrysler Corp., and Ford Motor Co., respectively, in research, engineering, and managerial capacities.

February Truck Production Drops to 28,692 Units

FEBRUARY motor truck production dropped to 28,692 units, about one-half of the January rate and the lowest monthly total since Pearl Harbor, the Civilian Production Administration announced recently. Passenger car production also decreased, dropping to 47,665 units from 57,775 in January. Labor management difficulties and parts shortages accounted for the poor showing in both cases, CPA said.

Reduced inventories of raw materials occasioned by the steel strike also played a large part in the decline in motor truck production from the post-war peak of 54,684 units produced in January, the agency stated.

While both passenger car and motor truck production will undoubtedly show substantial increases during 1946, the CPA's Automotive Branch will not make any forecasts of automotive production during the next thirty to sixty days because of the many variables in the supply situation.

Save COSTLY MAN HOURS! Speed REPAIR WORK!
Equip FOR SERVICE! Equip TO

CLEAN with STEAM

SIEBRING

STEAM CLEANER

OPERATES Economically!
Burns low cost commercial fuel oil or gas! Electric units also available!

Operates independent of city water pressure or electricity!

Easily moved about!

Makes QUICK WORK of Tough Cleaning Jobs! Cuts Grease and Grime in a Hurry!

A big asset in any repair shop or service station! A time and money-saver. ALSO A MONEY-MAKER! The Siebring PORTABLE Steam Cleaner provides instant steam, hot water or a combination of the two UNDER PRESSURE for fast cleaning on the toughest grease and dirt packed jobs. First it knocks loose, then it dissolves and quickly removes hardest packed dirt, grease and grime. Penetrates crevices and corners. Does a BETTER job in HALF THE TIME!

LOW COST, PORTABLE UNIT for CLEANING

- and WASHING AUTOMOBILES
- AUTO MOTORS
- MOTOR PARTS
- TRUCKS
- TRACTORS
- and OTHER TOUGH JOBS!

10-DAY Free TRIAL OFFER!

YOU RISK NOTHING! . . . Let us put this remarkable automatic steam cleaner in your shop for 10 DAYS' FREE TRIAL. See for yourself how simple it is to operate; how economical, safe and service free! Write for descriptive literature and details of our 10 Day "Free Trial" offer.

SIEBRING MANUFACTURING COMPANY

503 MAIN ST., GEORGE, IOWA

Tune Up for Spring

CHECK BRAKES!



● Compression, ignition, carburetion—okay. Now how about the brakes?

Relining fits right in with a springtime tune-up—an easy way to extra profit. Just pull a wheel, check the brake lining, and set up the sale for that big percentage of cars needing brake work.

Make it a Raybestos reline, and you give *full-range* brake control—instant, smooth stops; easy, positive slow-downs; overall safety. Only Raybestos has all seven types of lining necessary to service all cars properly. Each of the seven types is engineered for a specific purpose . . . Proving Ground tested . . . correctly combined in fast-moving PG Sets.

THE RAYBESTOS DIVISION of Raybestos-Manhattan, Inc.
Bridgeport, Connecticut

RELINE WITH

Raybestos

AMERICA'S BIGGEST SELLING

BRAKE LINING



PROVING GROUND TESTED

BRAKE LINING • FAN BELTS • HOSE

BRAKE BLOCKS • CLUTCH FACINGS

for Cars, Trucks, Buses and Tractors

Mobile Units to Train Dealer Body Mechanics

To help alleviate the scarcity of skilled auto body repairmen throughout the country, the Fisher Body Division of General Motors Corp., will conduct a national program designed to simplify and improve body repair methods as a direct approach toward aiding car dealers in the training and development of skilled body repair personnel. It is the first time such a comprehensive project has ever been attempted in the automotive industry.

The objective of the new program is to bring to dealers in the field the latest and most efficient methods of body repair and to train new mechanics for all phases of body work. Such work traditionally has been viewed with some trepidation by many garage mechanics because it requires certain special skills and "know how" in sheet metal, trim and painting.

Eight specially designed training units have been built to tour the United States and Canada. Six of the units are mobile and the other two will be transported by rail to large urban centers. Each is fully equipped

with cutaway half bodies and complete tools for all body repairs. Specially trained men will accompany the units to give instruction in approved body repair methods and in newly-developed techniques. In order that all General Motors dealers and car owners will have the benefit of the service, the overall program will be coordinated by the General Motors Service Section.

Ford of Canada Introduces New Car and Line of Trucks

The new Monarch automobile, creation of the Ford Motor Co. of Canada, Ltd., is the first new-name car to appear in Canada since the war. It is powered by a 97-hp., V8 engine and incorporates numerous ride control, braking and engine refinements. The car will be in the medium-priced field.

The new truck line, to be known as the "Mercury", will comprise a range of models running from a half-ton pickup on a 114-in. wheelbase to a three-ton model on a 176-in. wheelbase. In addition, a special truck-tractor unit and a school-bus chassis with a 194-in. wheelbase will be offered. With the introduction of the new line of trucks, and the addition for the first time of a full line of Mercury passenger cars, the company has created a new distribution division which will have exclusive sales rights on the Lincoln cars and the Mercury line of cars and trucks. It will be known as the Mercury and Lincoln division.

The Ford line of cars, trucks, buses and tractors, and the new Monarch car will be handled by the Ford and Monarch division, formerly the Ford division. Each of the divisions will have its own branch offices and dealers throughout the Dominion.

Studebaker to Manufacture Cars and Trucks in Canada

Studebaker Corp. recently purchased one of Canada's largest war plants, located in Hamilton, Ontario, for manufacturing passenger cars and trucks. The factory will be advantageously located to deliver cars, trucks and parts to customers. The site is convenient for either rail or water shipments and driveaways to the major concentration of the Canadian automobile market. New equipment will be installed in the plant as soon as it is available, and the company hopes to begin operations within a few months.

D. C. Gaskin, who has headed Canadian operations for Studebaker since 1941, will continue in his present position and will make his headquarters at the new plant. Wholesale distribution in Canada as well as manufacturing will be handled by the unit.



BEST...

**They are made better...and packaged better
They are guaranteed better...and patch better
They wear better . . . and stay sold better**

Every step in the manufacture of CAMEL Patches, from the raw ingredients of rubber to the perfection of the heat element, are carefully controlled by laboratory tests. For the past 23 years CAMELS have lived up to a reputation of quality. The combinations of "betters" blend into a patch that is the best all-around repair for either natural or synthetic rubber tubes.

This new hermetically factory-sealed package for vulcanizing patches is absolutely water repellent. This insures a perfect rubber patch and heat element when used. CAMELS are made better and packaged better.



Look for the familiar CAMEL package anywhere!

CAMEL Patches

H. B. Egan Manufacturing Company, Muskogee, Oklahoma

In Canada: GEORGE M. WATSON & CO., Ltd. Toronto, 2

Other CAMEL Products available in the complete line are: Quick Cure Gum, Tube Repair Kits, Garage-size Kits, Vulcanizing Cement, Rubber Cement, Tire Patch Cement, Vulcanizing Kits, and Valve Stem Heat Units.

BY THE MAKERS OF DUCO AND DULUX



**GET MORE JOBS
OUT FASTER**

with

**DU PONT HI-SPEED
PX PRIMER-SURFACER**

**STEP BY STEP—Your way to
BETTER FINISHING RESULTS**

- 1 **Clean** old finish with Prep-Sol to remove all wax, polish and grease.
- 2 **Sand** the surface well to give HI-SPEED PX PRIMER-SURFACER the best bond. Clean metal with an approved Rust Remover.
- 3 **IMMEDIATELY** apply HI-SPEED PX PRIMER-SURFACER in medium coats. If you wait, rust begins to form. Even slight rusting impairs adhesion.
- 4 **After last coat** of HI-SPEED PX PRIMER-SURFACER has dried at least 30 minutes, sand with 400 paper and water. Wipe. After surface is dry, it is ready for finishing with DUCO or DULUX Systems.



Want a short-cut that nets more repaint jobs per day, saves time and trouble? Put Du Pont HI-SPEED PX PRIMER-SURFACER to work for one short week and see the difference. This tested and proved product produces a high build. It has excellent adhesive and filling qualities, dries fast to permit easy sanding after 30 minutes. Will not tear when feather-edged. Holds out the lustre of finish coats.

When you use HI-SPEED PX PRIMER-SURFACER you stand to profit two ways. First, you save application time, sanding time. Second, you turn out better looking paint jobs that build repeat business.

Get a case of HI-SPEED PX PRIMER-SURFACER from your Du Pont jobber today. Comes in four utility colors. E. I. du Pont de Nemours & Co. (Inc.), Finishes Div., Refinish Sales, Wilmington 98, Del.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY



HI-SPEED PX PRIMER-SURFACER

Her Resort Ensemble

custom-fashioned by

Clare Potter

The Motor Oil

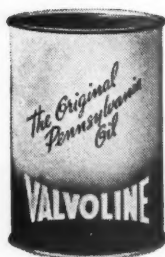
for her car—

custom-made by

VALVOLINE



To control its quality,
Valvoline is refined in limited
quantity from pure Pennsylvania
crude oil. Every quart costs us more
to make—costs you less to use.
Naturally, Valvoline is not on sale
everywhere, but you will find it
at better dealers coast-to-coast.
Sold always with this unconditional
guarantee: Valvoline's performance
must completely satisfy you—
or your money back!



VALVOLINE

The Original Pennsylvania Motor Oil

Freedom-Valvoline Oil Co., 431 Main St., Dept. 12D, Cincinnati 2, Ohio.
New York, Washington, Toronto, Pittsburgh, Atlanta, Detroit, Chicago,
Los Angeles, Vancouver, B. C. Refineries at Butler and Freedom, Penn

AS ADVERTISED IN
Current Issues of
LIFE and TIME

New Assembly Plants Added by General Motors

Construction has begun on new plants in the General Motors Corp. expansion program for the assembly of Buick, Oldsmobile and Pontiac automobiles. The new plants will be located at Wilmington, Del., Framingham, Mass. and Atlanta, Ga. All follow the same general pattern and are of about the same size, with straight-line flow of assembly and sub-assembly operations. The new plants are designed to provide quicker and more efficient service to dealers and car buyers in the areas to be serviced from the plants. The Wilmington and Framingham projects have been under way since the turn of the year and are expected to be completed in ample time for assembly of 1947 model cars.

MEWA Issues Pictorial Review on Conferences

National headquarters of the Motor and Equipment Wholesalers Association have recently issued an attractive 20 page booklet reviewing in pictures their November and December Regional Reconversion Conferences at Chicago and New York.

A new style of presenting a review of an association conference has been used in this booklet along with excellent candid photos. All editorial comment on these two very successful M.E.W.A. Conferences are actual excerpts taken from the news pages of the Chicago and New York daily newspapers at the time of the meetings and the automotive trade publications.

Copies of this Conference review booklet have been sent to all automotive aftermarket industry executives.

General Tire Co. Acquires Texas Tire Tube Plant

THE War Assets Corp. recently announced authorization of the sale of a portion of the facilities and lease of another portion of the partially completed tire and inner tube plant at Waco, Texas, to the General Tire and Rubber Co., war time lessee, subject to the priority right of Federal Government agencies.

The company is purchasing the Benbury building, a laboratory building with a floor area of approximately 12,000 square feet, the construction materials on the site and certain Government-owned machinery and equipment now located in the company's Akron, Ohio, plant for \$376,000. The actual cost of the property concerned is \$447,290 and the estimated fair value is set at \$377,300.

The buildings and facilities will be used as adjuncts to the company's own plant for the production of inner tubes.



There's plenty up our sleeve!

**ONLY RESISTOFLEX
MAKES THEM ALL**



LACQUER COVER—Original equipment on passenger cars and light trucks.



SYNTHETIC RUBBER COVER—Original equipment on medium trucks and tractors.



WIRE BRAID COVER—Original equipment on heavy trucks and buses.



ASBESTOS COVER—For additional protection against external heat, as in rear engine mounts.

**AND ALL HAVE THE
COMPAR TUBE**

**plenty of time-savers
plenty of money-makers**

FOR YOU!

WHEN YOU STOCK THE GASOIL HOSE THAT WON'T ROT, CLOG, LEAK, BREAK OR COLLAPSE, you get plenty of extras to help you make profits.

There's the plastic identification sleeve itself—permanently attached, its lasting catalog information quickly tells you where to use the hose assembly.

Next, there's the distinctive maroon color that tells you it's gasoil hose with the compar tube that is totally unaffected by gasoline, lube oil, crankcase additives, and grease—totally unaffected, too, by vibration and flexing.

Resistoflex gasoil hose—for 7 years original equipment—is now available to dealers for the first time. Tell your distributor you're interested in this quality line.



**ORIGINAL EQUIPMENT IN AIR,
OIL, AND FUEL SYSTEMS OF
CARS, TRUCKS, BUSES, TRAC-
TORS, VESSELS AND AIRCRAFT**

RESISTOFLEX

Trade-Mark Reg. in U. S. & Can. Pat. Off.

**Resistoflex Corporation
Belleville 9, New Jersey**



**PLANTS: Belleville, N. J.;
Elkhart, Ind.; Toronto, Can.**

WHICH?

MONEY LOST IN
REPLACING TOOLS

OR

MONEY SAVED BY

KEEPING TOOLS

SAFELY

IN A

HALLOWELL

STEEL TOOL CABINET

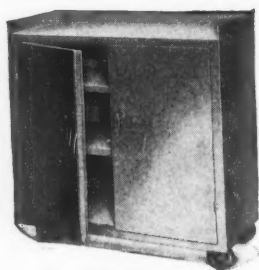


Fig. 1748

This handy cabinet on casters may save you many times its own small cost. For, in the rush of business, it is plenty easy to mislay a tool, or lose it through pilfering. A "Hallowell" Steel Tool Cabinet will avoid all this. It keeps the tools for you under lock and key, and on casters . . . right next to the job! Exceptionally sturdy, it will last a lifetime.

For other time- and money-saving Shop Furniture items of steel, write for the free "Hallowell" Catalog. Stools, foreman's desks, tool stands, anything that will make your shop more efficient and keep it neat looking will come from "Hallowell." Not only that, "Hallowell" has such a wide variety of styles available, that you are sure to find what you want. Of fine, sturdy welded construction that will last lifetimes, "Hallowell" shop furniture is the best investment you could make.

"Unbrako" and "Hallowell" products are sold entirely through distributors.



OVER 43 YEARS IN BUSINESS

**STANDARD
PRESSED STEEL CO.**

JENKINTOWN, PA.

BOX 561

Branches: Boston, Chicago,
Indianapolis, St. Louis, San Francisco

New Flush-Master Machine Announced

The Flush-Master is a compact self-contained machine which flushes, cleans, removes sludge, carbon and foreign matter from the motor. The machine occupies 20 inches of floor space and is easy to handle. A complete flushing job can be done with



the machine in 8 minutes. Operation of the machine is by air pressure. The Flush-Master cleans all parts of the crankcase and lower motor. A fine screen catches all heavy carbon particles and a self-contained filter removes the sludge.

Full details may be obtained from the Manufacturers Development Corp., Dayton 1, Ohio.

Arrow Increases Line Of Lenses and Flares

The Arrow Safety Device Co. of Mount Holly, N. J. has completed licensing arrangements for the use of the Stimson patented plastic and glass reflex-type reflectors and lenses. Arrow is licensed to use these in its line of automotive-lighting and safety-device equipment and for sale as replacement parts.

The company is now fully licensed to use the H. N. Carver patents applying to reflecting type of road flares. Production has started on the new Arrow Reflecto-Flare, which will be featured in trade publication advertisements.

Engineering Appointment

The appointment of W. E. Mack as assistant to H. C. McCaslin, vice president in charge of engineering of Kaiser-Frazer Corp. and Graham-Paige Motors, has been announced.

With Chrysler Corp. for 11 years, Mack was in charge of specifications and laboratory equipment in the engineering division in Detroit and, during the war, in the Dodge-Chicago B-29 plant. His work in Detroit included design of the testing laboratories for the Chrysler Institute of Engineering.

SHIN-HEAD

FLASHLIGHT

nothing else like it!

HEAD TURNS
LIGHT AT

ANY ANGLE

Greatest advance in flashlight design in a generation. Turn power, light pre-focused beam where you want it. Stand it up . . . clip it on . . . both hands are free. A handsome, durable, all-purpose flashlight for everyone. Ask your dealer.

\$2 LESS
BATTERIES

USALITE

No. 3W-22
Patented

No. 75 Heavy
Duty Dated
Call. Fresh
Lasts longer 104

Flashlights & Batteries

USALITE

TELLS ITS STORY

...to over

*9 million
people!*

Strong-selling messages like this are appearing regularly in leading national magazines . . . reaching over 9 million prospects.

Get your share of the profits from the increasing demand for USALITE Flashlights and Batteries. Remember, the USALITE trade-mark is the consumer's guarantee of quality and dependability . . . your assurance of repeat sales. Order from your jobber . . . today!



Flashlights & Batteries

"A" & "B" Batteries for Portable Radios
UNITED STATES ELECTRIC MFG. CORP. Factory and
Exec. Office: New York 11, N.Y. • Branch Office: Chicago 7, Ill.



1

**USE
THEM!**

For Cold, Non-Vulcanized
Repairs In Your Own Shop

2

**SELL
THEM!**

To Motorists For Emer-
gency Roadside Use



2 ways YOU PROFIT WITH... INLAND EMERGENCY TIRE REPAIR PATCHES!

With this new addition to the Inland line of "Profit Makers" you make money 2 ways—by installing them in customers' tires... by selling *extra* patches to motorists for emergency roadside use. Packed in Inland green, yellow and red display cartons, Inland Patches are one of the "hottest" tire repair lines on dealers' shelves today—the only line of Emergency Tire Patches packaged for across-the-counter volume sales. No buckling or curling . . . cords extend full length of plies . . . no half-plies . . . tough, flexible and featheredged . . .

Special Assortment \$14.74

45 Patches • Quart of Emergency Cement
Can of Talc • Stitcher • Brush

Free Folder gives complete
details on shapes, sizes and prices.

33 So. Clark St., Dept. MA-4—Chicago 3, Ill.



INLAND

INLAND RUBBER CORPORATION

Subsidiary of Minnesota Mining & Manufacturing Company
Branches in thirteen principal cities

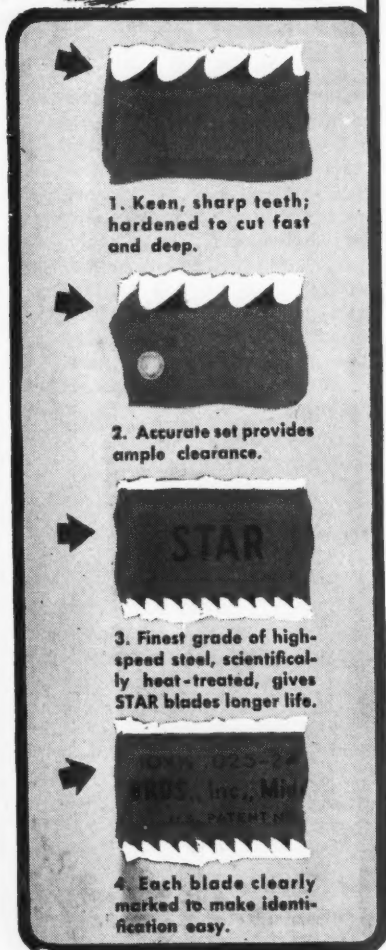
TIRE MANUFACTURERS SINCE 1910

**To: Hack saw users
A WORD
OF ADVICE**

**Buy STAR Blades
FOR faster cutting
FOR cleaner surface
AND they last longer
HERE'S WHY**



FREE — STAR
Metal Cutting
handbook gives
valuable instructions
on selection,
use, and care of
hack saw blades.



CLEMSON
CLEMSON BROS., Inc., Middletown, N.Y.
Makers of hand and power hack saw blades,
frames, metal cutting band saw blades
and the Clemson D-17 lawn machine.

© 7574

Expansion Program Planned By American Brakeblok

The American Brakeblok Division of American Brake Shoe Co., Detroit, Mich. will erect a new plant in Winchester, Va., to produce A-B-K safety tile and supplement the line of American Brakeblok friction materials. The new building is the third to be erected under American Brakeblok's expansion program. A plant in Lindsay, Ont., for production of automobile and industrial brake lining material has been planned for some time. Construction has already begun on a new American Brakeblok research laboratory at Mahwah, N. J.

Kex Tire Plugs

The Wedler-Shuford Co., manufacturers of the Kex Tire Plug, announces that sufficient quantities are being delivered to jobbers and distributors to service the badly worn tires of fleet operators, truckers, and car owners.

Kex Tire Plugs seal the puncture all the way through the hole in the casing structure. The broken fabric is well supported inside with the patch head of the plug relieving the pressure against the casing wall at the place of injury. It requires no technical skill or experience to install Kex and they are adaptable to all sizes of pneumatic tire casings.

Write to The Wedler-Shuford Co., 2222 Olive St., St. Louis 3, Missouri.

Increased Costs Would Push Prices Up

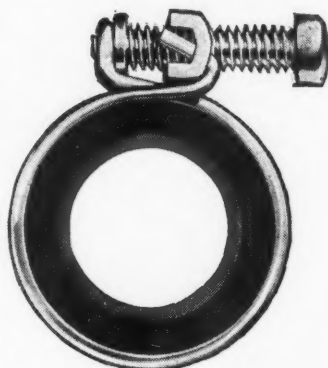
If there were no OPA price restrictions, the price of cars would increase about 25 per cent over pre-war levels, according to Nicholas Dreystadt, general manager of Cadillac division of General Motors. The increased cost of manufacturing, he said, is due about equally to labor and materials.

New Fast Battery Charger

The Electric Heat Control Co., 9123 Inman Avenue, Cleveland 5, Ohio, announces the new "KING" fast battery charger, Type FC-4. The instrument panel is on top of the cabinet so that there is no stooping to read meter or adjust controls. A cover is provided to protect instrument panel when not in use. "KING" fast battery chargers have two accurate D'Arsonval meters.

One indicates the ampere charging rate and the other indicates the condition of battery and state of charge. All meter readings are taken at a glance without manipulating any switches. The meters have colored bands that are easily understood.

**ONE
new
HOSE CLAMP
that's different!**



ONLY
the **CENTRAL "360"**
HAS ALL THESE FEATURES

"By every test 360's the best"

ONLY THE "360" forms
a complete circle, with
no "blind spot."

ONLY THE "360" has the
new "push-pull" power
principle.

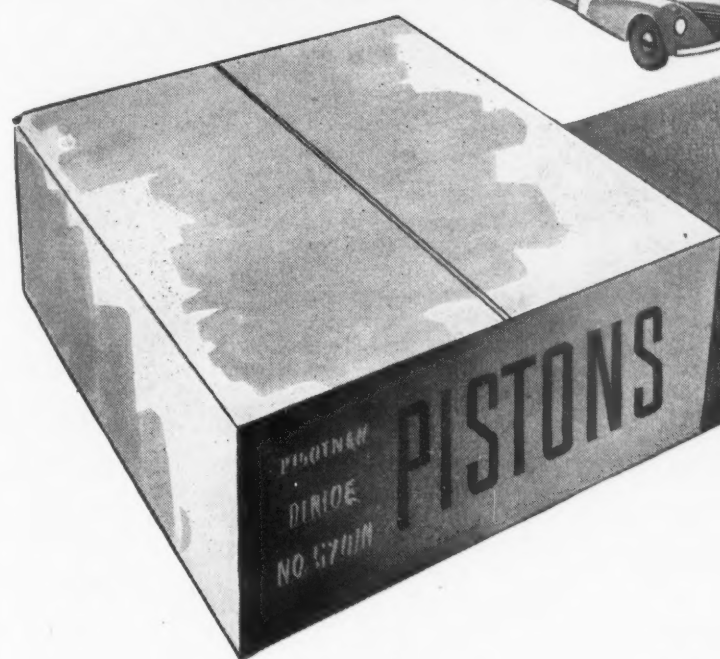
ONLY THE "360" has
such a wide margin of
take-up on the screw.

ONLY THE "360" applies
pressure all the way
around the hose *evenly*.

ONLY THE "360" pre-
vents leakage *from any*
point around the hose.

Write today for your **FREE**
samples of Central's "360" Wire Hose
Clamp and Bulletin Number 4246.

CENTRAL EQUIPMENT CO.
900 S. Wabash Ave., Chicago 5, Ill.



That new car, bus, or truck you're buying is quite likely equipped with Alcoa's LO-EX* Pistons.

That carton of matched replacement pistons you get from your parts jobber ditto.

Whichever the package, each bears a famous trade name—but all carry this mark of quality—LO-EX, by Alcoa.

*Reg. Trademark

ALUMINUM COMPANY OF AMERICA
2133 Gulf Building, Pittsburgh 19, Pa.

LO-EX
REGISTERED TRADEMARK
PISTONS OF



IT'S COMING!

prest-o-lite

BATTERIES

*Ask the man behind
the*



Right Here



Right Man

YES, THE DODGE dealer organization continues to offer exceptional opportunities to the right men.

They occur in trading areas where the sales and service opportunities are large and profitable, but where neighboring Dodge dealers are unable properly to cover the necessary ground.

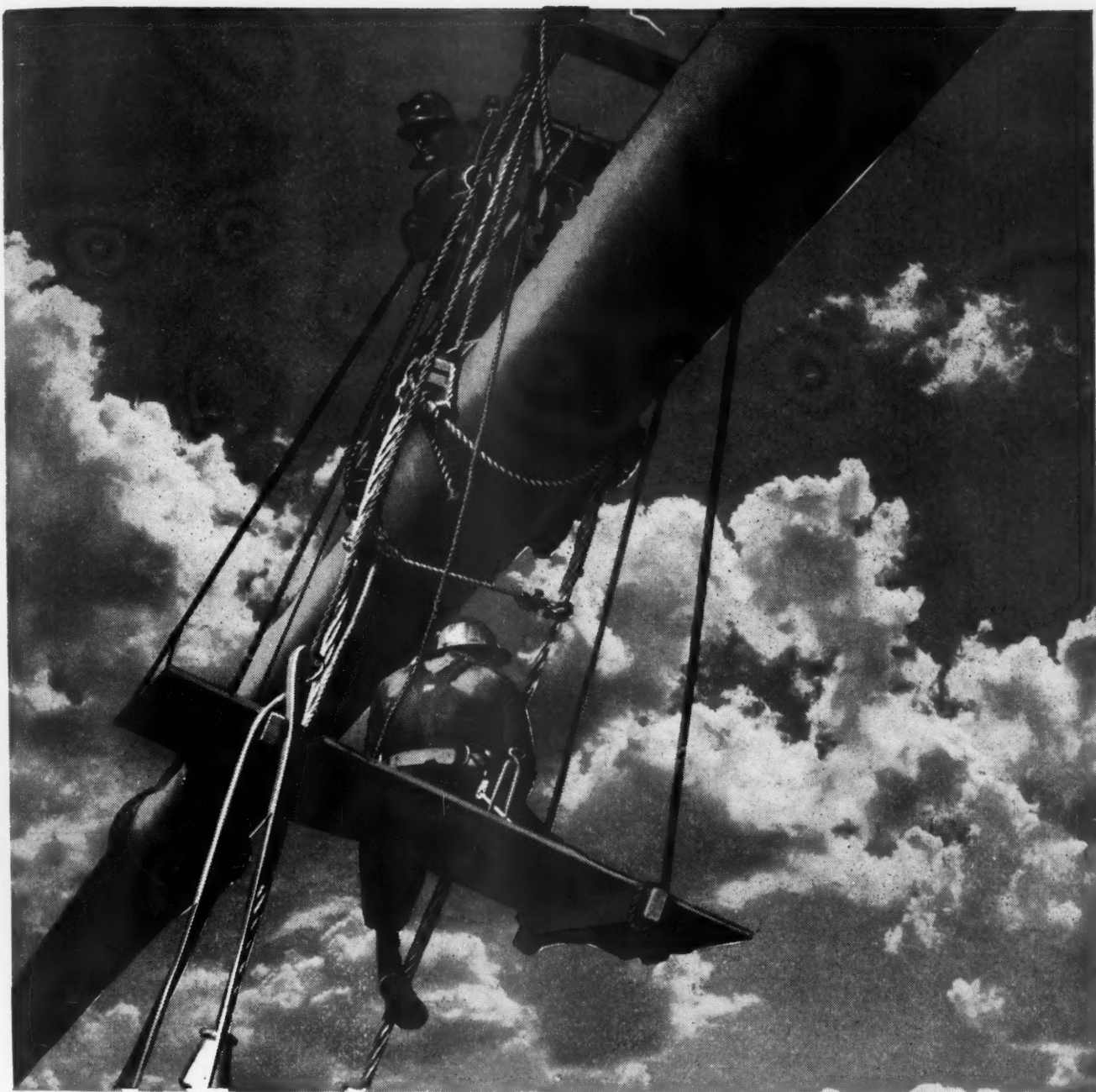
If you are interested in such opportunities, get in touch with us without delay. If you are the right man we have a fresh page reserved for you in the official books of our organization.

You'd be joining one of the strongest sales structures in the automobile business. You'd operate under a single sales and service agreement embracing two fine cars (Dodge and Plymouth) and the full line of Dodge Job-Rated Trucks.

If you are thinking along these lines, now is surely the time and opportunity.

DODGE • PLYMOUTH • DODGE Job-Rated TRUCKS

DODGE—DIVISION OF CHRYSLER CORPORATION, 7900 JOS. CAMPAU, DETROIT 11, MICH.

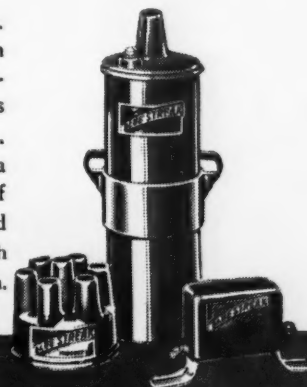


Up On Top! . . . the maintenance crew. Below, a doctor rushes to mend a broken leg . . . a truck, heavy with food for a teeming population inches across . . . and thousands more motorists roll over the bridge to and from their daily work. The man on top must make it safe for them to travel.

Your job is like theirs. No glamour — just grease and overalls. But it's got to be done . . . and by experts. By men who know motors and all their quirks. By men who

know "parts" as a coffee-taster knows flavor.

To men like you we talk Blue Streak Ignition Parts. For something about an expert (experience and a prized-reputation, no doubt) makes him consider toughness and long life first . . . price, later. That's why so many pay a few extra pennies for Blue Streaks . . . for finer grades of raw materials, for individual inspection and surer performance features. You profit more with Blue Streaks . . . in hard cash and in reputation.

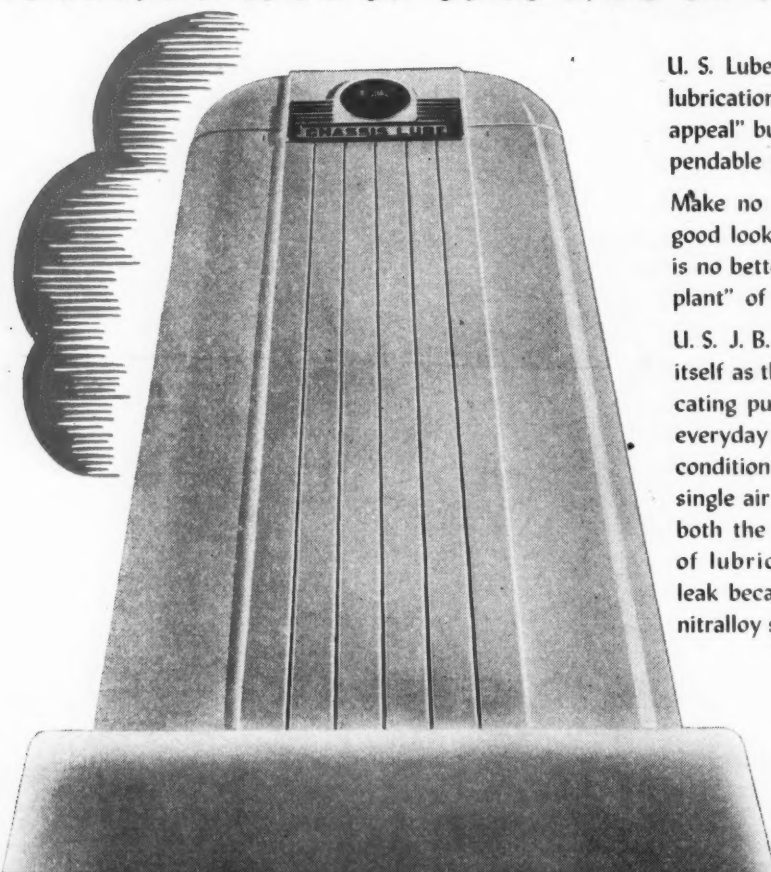


STANDARD MOTOR PRODUCTS, INC.

3740 Northern Boulevard

Long Island City 1, New York

You see more modern
U.S. LUBE
UNITS
because there are more in daily use!



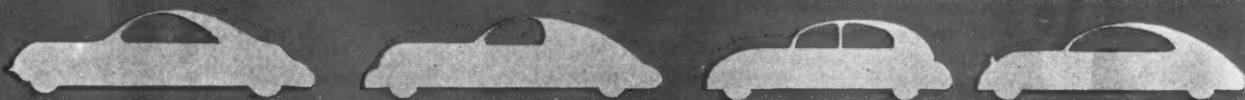
U. S. Lube Units have set the pace in modern lubrication not only from the standpoint of "eye appeal" but also from a day in and day out, dependable performance.

Make no mistake about this regardless of how good looking or showy any lube unit may be, it is no better than its pump, which is the "power plant" of the unit and does all the work.

U. S. J. B. lube pump has definitely established itself as the most unique and outstanding lubricating pump on the market, based on tests and everyday performance under all kinds of working conditions. It boasts of many features such as a single air valve which assures positive action on both the up and down stroke, producing a flow of lubricant on every stroke. Valve will not leak because it operates against a seat of glass nitralloy steel and this is very important because a leaky valve means trouble.

U. S. Lube units are competitive in price even with their many added exclusive features.

*Send in for free
 U. S. Lubricating Catalog.*



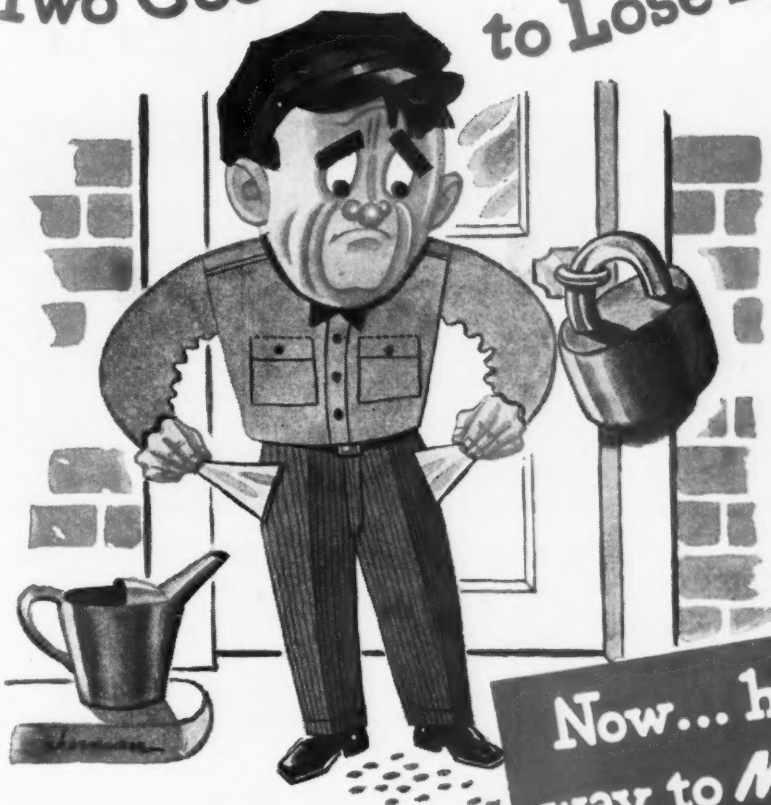
THE UNITED STATES AIR COMPRESSOR CO.

CLEVELAND 5, OHIO, U. S. A.

AIR COMPRESSORS • HYDRAULIC LIFTS • LUBRICATING EQUIPMENT



Two Good Ways to Lose Money FAST!



1 Tell your customers you don't have time or equipment to do tire repairing. Send them to your competitor down the street. In a short time he will have ALL of YOUR business!

2 Do a few slipshod jobs of tire repairing. The tires will blow . . . customers will be mad . . . the news will spread . . . and you won't have to worry about any more tire repairing. You won't get any.

Now... here's a good way to MAKE Money!

Are YOU missing the boat on RADIATOR SERVICE?

● Here's extra profit for Bowes Dealers. Radiators should be cleaned in the Spring. Sell 'em

Bowes Radiator CLEANSER
Then, it's easy to sell . . .

BOWES RUST PREVENTIVE
And, because cleaning frequently reveals leaks, suggest a can of

BOWES RADIATOR LIQUID
Offer the complete service and make a good profit on a job that takes only a few minutes. Most customers will buy all three.

● Your customers are "tire-conscious" and will be for some time to come. They can buy gas and oil anywhere . . . but . . . they are *right particular* about how their tires are repaired. Give 'em a good, safe tire repair job and you'll make friends and permanent customers.

Build Customer Good Will with BOWES "Seal Fast" Tire Repair Equipment

Bowes tire repair materials and equipment PLUS training by our factory trained experts will enable you to do SAFE, profitable tire repair jobs which will create an enormous amount of customer good will.

If you want the coming profitable new tire volume, this same good will, thus established, will bring you your share of that business. Write today if you'd like to have a Bowes Distributor call, without obligation, and explain the Bowes profit-making plan for smart, eligible dealers.

BOWES



TIRE SAVING SYSTEM

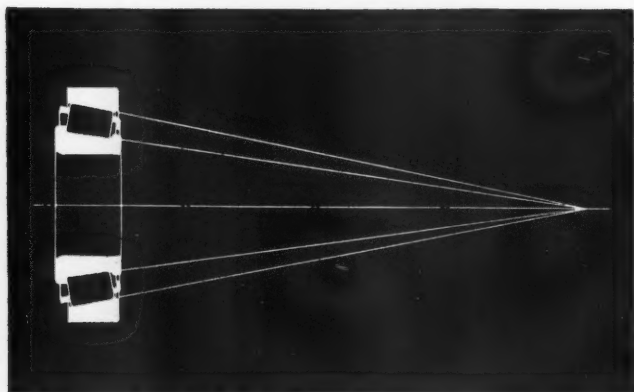
BOWES "SEAL FAST" CORPORATION, INDIANAPOLIS 7, INDIANA

How is your Bearing **I.Q.?**



1. Why is a Timken Bearing tapered?

- To save weight. ☐
- Carry all types of loads. ☐
- Cheaper to make. ☐



2. Why is there true rolling motion in a Timken Bearing?

- Because lines drawn along the tapered surfaces meet at a common point on the axis of the bearing. ☐
- Cups and cones are made from tubing. ☐
- Because they are so accurately made. ☐

3. Why are the rollers in a Timken Bearing positively aligned?

- The cage keeps them in line. ☐
- There is a wide area of contact between the large end of the roller and the cone rib. ☐
- There is always an uneven number of rollers. ☐

ANSWERS

1. The Timken Bearing has tapered rollers to secure maximum capacity to carry radial and thrust loads in any combination.
2. Lines drawn along the tapered surfaces meet at a common point on the axis of the bearing.
3. The wide area of contact between the large end of the rollers and the cone rib assures positive alignment of the rollers at all times.

You might not know the correct answer to some of the questions above but

Be sure the trade-mark "TIMKEN" is on every bearing you use.

THE TIMKEN ROLLER BEARING COMPANY, CANTON 6, OHIO

Why

EQUIP FOR NAIL-HOLE JOBS WHEN YOU CAN DO
UP TO 4" x 6" ... REPAIRS IN A SINGLE CURING

Plastomatic Service Master \$57.50

REPAIRS 94% TIRE SIZES MADE AND ALL TUBES

1. Service Master Tire and Tube Vulcanizer

2. Plastomatic Pressure Bag

3. Straight pressure adapter for all tube and tire tread repairs.

4. Electric heat box with exclusive Plastomatic feature for straight and angle valve replacements

5. Combination tube valve and sidewall block

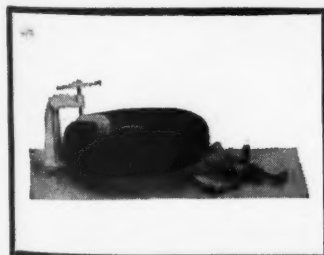
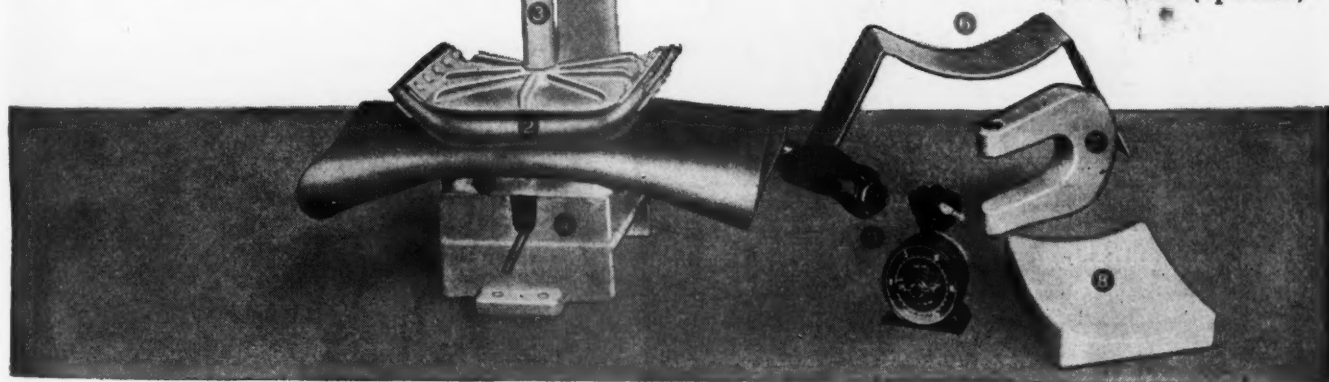
6. Tire support

7. Sidewall adapter

8. Tire tread plate

9. Electric cord

Time control (optional)



Set up for sidewall repair. Special block for sidewall and shoulder repairs available.

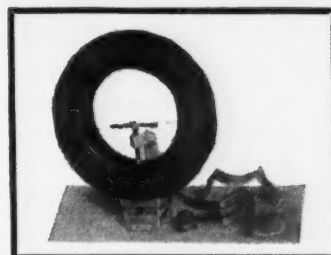
Car Dealer, Service Station, Tire Dealer or Independent — if you want to equip for bigger business, better service and increase your profits, order your Plastomatic Vulcanizer from your jobber today.

Plastomatic costs less than ordinary vulcanizer equipment, yet with it you have a complete shop to give your customers expert, safe, Tire and Tube Repairs Service.

If you want to modernize your old equipment, ask your jobber about Plastomatic Pressure Bags. They are adaptable to nearly every make of spotter and tube unit on the market.

With Plastomatic you handle natural or synthetic jobs, get uniform pressure and increase the repair area in a single cure.

No delay — Immediate delivery!



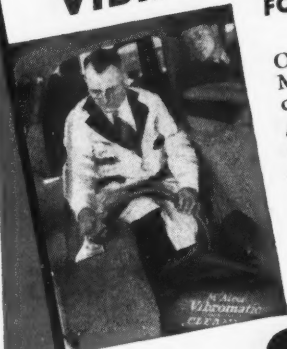
Service Master set up for tread repair.

ROCKVILLE VULCANIZER EQUIPMENT CO., Inc.

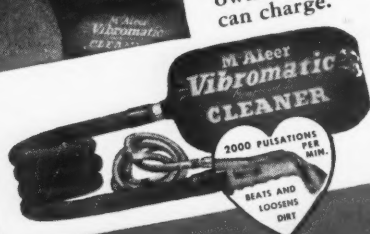
45-22 38th STREET • LONG ISLAND CITY 1, NEW YORK

Cash in NOW with these **BIG 3** PROFIT MAKERS

1 VIBROMATIC CLEANER FOR VACUUM CLEANING CAR INTERIORS



Operates with compressed air. More powerful than any electric cleaner—really gets the dirt.
A BUSINESS BUILDER—Service station and garage owners, car dealers, wash rack operators are building new business—making more money, vacuum cleaning car interiors the *Modern Vibromatic Way*. Here's a service car owners want and for which you can charge.



COST ONLY
\$28⁹⁵
COMPLETE



Aye, it's a wise dealer who knows a good thing when he sees it!

MAKE MONEY WITH MCALEER

Live wire Jobbers and Dealers are cashing in on these popular McAleer leaders—introduced less than six months ago and today **BIG VOLUME BUSINESS** wherever sold. They're naturals—all three products. Sales have actually been sensational—beyond all expectations.

McAleer is backing these products with powerful point-of-sale promotion and merchandising support—plans and programs to boost sales in all territories.

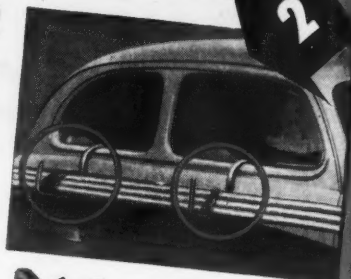
Send today for money-making proposition—liberal discounts—details of factory co-operation.

McAleer

ALL NEW ORIGINAL PRODUCTS
NO COMPETITION, EVERY ONE A LEADER

SIDE CAR CARRIER

Thousands of car owners need this practical device. It carries anything too long to go inside a car. A fast seller—one Detroit dealer sold 72 pair in each of five stores in two hours from a small 4" ad. Sells on sight to sportsmen, campers, tourists, farmers, painters, plumbers, carpenters—every car owner who has to carry anything too long to go inside his car. Fits most cars. Easily attached. Can't mar finish. Rubber cushions protect win-



LIST PRICE
\$4⁵⁰
PER PAIR
plus 11¢ excise tax

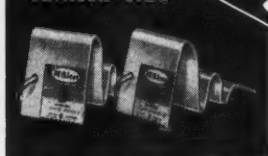
dow sill—vacuum cups hold carriers firmly in place. Adjustable straps secure load.

PASSENGER CAR SIZE



\$4⁹⁵ Per Pair

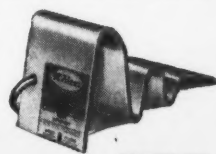
TRUCK, BUS, TRAILER SIZE



\$8⁹⁵ Per Pair

SPRING ACTION WHEEL CHOCKS

A practical safety device. Blocks wheels securely—safely—on any surface—any grade. Bus, truck, trailer, taxi and passenger car operators need it for emergency stops, parking on grades, when changing tires. Millions of prospects.



WORTH ITS WEIGHT IN GOLD WHEN BRAKES DON'T HOLD

Automotive Division

MCALEER MANUFACTURING CO., ROCHESTER, MICH.

AUTOMOTIVE — HOUSEHOLD — INDUSTRIAL PRODUCTS

McAleer Manufacturing Co., Ltd., Chatham, Ontario

When writing to advertisers please mention Motor Age

MOTOR AGE

KEEP OIL FREE

FROM ABRASIVES WITH

PUROLATOR

THE OIL FILTER

Originates the
**MICRONIC
OIL FILTER**

*The Greatest Development in the
History of the Oil Filter Industry*



With the origination of the Purolator Micronic Oil Filter Element, Purolator demonstrates once again its unchallenged leadership in the oil filter industry. The origination of this sensational filter element was started by Purolator long before Pearl Harbor. When the Armed Forces demanded a filter element which would filter abrasives down to the size of a micron (.000039 of an inch), the Purolator Micronic Oil Filter Element was the first filter element submitted by the oil filter industry which could successfully meet the specifications.

NOW . . . this sensational filter element becomes a leading item in the Purolator Line. Already the demand for the Purolator Micronic Oil Filter Element is sweeping like a tidal wave across the country. Ride the crest. Profit with Purolator.

PUROLATOR PRODUCTS, INC.
Founder and Leader of the Oil Filter Industry
Newark 2, N. J.

In Canada: Purolator Products (Can.), Ltd., Windsor, Ont.

►Has It Ever Occurred to You that YOU LOSE MONEY ON 2 OUT OF EVERY 3 CARS YOU SELL

BACK IN 1929 you financed 6 out of every 10 cars you sold. And realized a sizeable reserve on each. By 1941 you lost all but about 3 finance deals in each 10 cars you sold.

And that year, only a few banks did nearly a 1½ billion dollar volume in auto financing. Every such dollar cut you out of a profit.

Based on U. S. Government compiled figures, it can be shown that bank deals cost the dealers in major markets an average of \$5,088 in reserve profits in 1941.

The picture is worse now.

Now there are 10,000 banks financing automobiles and 75,000 insurance men have organized to short-circuit dealers by encouraging direct deals. It is authoritatively estimated that this—in the next 12 months—can cost the average city-dealer \$7,500 and perhaps as much as \$10,000 in reserves. Will you be one to lose this important profit?

You won't...

if you are a GFC Dealer. GFC Dealers will have a new plan which meets bank competition on every point. Rates as low as the lowest! Complete insurance that really protects. Liberal credit con-

sideration. An easy collection policy. Motor Club services. Repair financing. These are only a few of the selling points for the car buyer.

And for you—the dealer—there's a liberal reserve, continued wholesale, and generous used car financing, including marginal credit risks (all of

which direct deals could ultimately cut off).

★ ★ ★

GET THE FACTS. Preserve your reserve profits. Write, phone or wire GFC headquarters in Chicago. Ask to have our nearest office lay full facts of this new plan before you.

ESTIMATED ANNUAL LOSS OF DEALER RESERVES in a few major cities, on bank-financed deals*

| | | | |
|--------------|---------------|---------------|---------------|
| ALBANY | \$ 111,936.00 | MEMPHIS | \$ 162,816.00 |
| ATLANTA | 178,080.00 | MIAMI | 91,584.00 |
| BALTIMORE | 254,400.00 | MILWAUKEE | 295,104.00 |
| BOSTON | 290,016.00 | MINNEAPOLIS } | 417,216.00 |
| BUFFALO | 193,344.00 | ST. PAUL } | |
| CHICAGO | 1,348,320.00 | NEW ORLEANS | 183,168.00 |
| CLEVELAND | 595,296.00 | NEW YORK | 1,740,096.00 |
| DALLAS | 239,136.00 | PHILADELPHIA | 605,472.00 |
| DES MOINES | 193,344.00 | PITTSBURGH | 284,928.00 |
| DETROIT | 697,056.00 | SAN FRANCISCO | 483,360.00 |
| HOUSTON | 228,960.00 | ST. LOUIS | 534,240.00 |
| INDIANAPOLIS | 239,136.00 | SEATTLE | 305,280.00 |
| JACKSONVILLE | 132,288.00 | | |
| KANSAS CITY | 417,216.00 | | |

*Computed by multiplying major-city-dealer average loss of reserve by number of dealers in each city.



Send for interesting booklet which tells how much
bank competition cost you in lost reserves.

General Finance Corporation

BRANCH OFFICES IN



PRINCIPAL CITIES

184 West Lake Street • Chicago 1

They Go
↓ TOGETHER ↓



Every time you rebuild,
repair, or install a Carburetor
be sure to include
a Ceramic Fuel Filter

The scientifically designed filtering element of a specially prepared porcelain assures a steady flow of gasoline free from dirt, lint, and harmful matter.



CARBURETOR

TRADE MARK REG. U. S. PAT. OFF.
MARCA REGISTRADA

CARTER CARBURETOR CORPORATION • St. Louis 7, Missouri

Division of American Car and Foundry Company

APRIL, 1946

When writing to advertisers please mention Motor Age

143

Profit-WISE... Performance-WISE

**THE FINEST RAPID BATTERY CHARGER
THE TRADE HAS EVER KNOWN**

HR-53-2

- 1 Extra heavy duty 200 ampere discharge unit for desulphation of batteries and individual cell test (three individual cell test meters operate simultaneously).
- 2 Rapid charge 100 ampere heavy duty, self-healing, magnesium-copper sulphide dry-plate rectifier maintains efficiency over longer period and runs cooler.
- 3 Multi-circuit tap switch provides fine current adjustments. All controls in one knob.
- 4 New type rubber tired, 10 x 1.75 extra heavy duty steel wheels and brake equipped swivel caster.
- 5 Fully automatic time switch frees operator for other work after simple dial adjustments have been made.
- 6 Slow charges from 2 to 10 batteries simultaneously in parallel.

**BY THE
ORIGINATOR OF
RAPID BATTERY
CHARGING**

ask your jobber
**TO SHOW YOU THE
HR-53-2 TODAY!**



HARTMAN
CORPORATION OF AMERICA

6417 Manchester • St. Louis 10, Missouri

ACT NOW TO SELL
THESE POPULAR DU PONT
BRANDS THIS FALL...
ORDER EARLY!



Regular dollar "Zerone" is back—

the safe, efficient prewar formula. But if you hope to stock popular "Zerone"—it's "The Dollar Brand in Most Demand"—we suggest you place your order as soon as possible.

★ ★ ★

"ZEREX"—the famous non-evaporating glycol anti-freeze—will again be available, but sup-

plies this year will not reach prewar levels. It will retail at the established price—\$2.65 a gal.

★ ★ ★

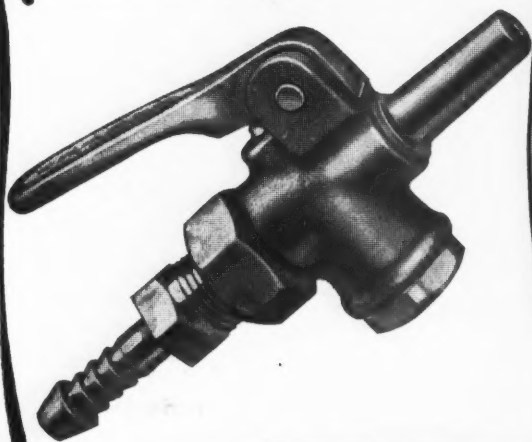
Remember, "Zerone" and "Zerex" have these advantages: Made by Du Pont, which means technical superiority and ready sales acceptance—priced uniformly to protect your investment and profits—consistently advertised.



BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

"ZERONE" AND "ZEREX"
ANTI-FREEZE

*Modern
as Tomorrow*



HANSEN AUTOMOTIVE AIRLINE EQUIPMENT

It takes modern equipment to render the kind of service demanded by to-day's car owner. That is why Hansen Automotive Airline Equipment is now used by more service station operators than ever before.

Every service station, garage, car dealer and repair shop can use Hansen equipment advan-

tageously because it is designed and engineered to do a service job faster, better and more economically.

HANSEN SAND BLAST CLEANER is an ideal unit for removing old paint, rust and carbon etc. Container holds three pounds of sand. Furnished with $\frac{1}{4}$ " hose stem for airline connection.

HANSEN BLOW GUN is a sturdy lever-operated blow gun with accurately machined air valve. Body of heavy cast brass which will withstand rough handling. Stem for air connection furnished in $\frac{1}{4}$ " $\frac{3}{8}$ " $\frac{1}{2}$ " size.

HANSEN JET OILER is manually operated, projects a solid jet of light or penetrating oil when plunger is depressed. Oil container has a one quart capacity. All pump parts are enclosed in handle, fully protected.

Send for free automotive catalog.



HANSEN MANUFACTURING CO.

1786 EAST 27th STREET • CLEVELAND 14, OHIO



some get LAUGHS

...some get SIGHS



**Capper's Farmer
gets ACTION!**



Action through influence . . . that's how CAPPER'S FARMER works in your favor. The influence CAPPER'S FARMER exerts on its 1,275,000 farm family readers is basic . . . it stems from helpful suggestions—profitable advice and practical information. That's why it's an influence that extends to the everyday buying habits of its readers—farm men, women and youth—the dominant farm families of rich Mid-America, whom dealers like yourself rate best customers. Yes, when the products you sell are advertised in CAPPER'S FARMER, you can stand by for action . . . sales action.



***Here's how one Automobile Dealer
rates CAPPER'S FARMER readers:***

The following testimonial of G. E. Coffey, prosperous automobile dealer of Wymore, Gage County, Nebraska, is backed by similar reports from many rural automobile dealers of Mid-America's rich farm lands. This is what he said after inspecting the CAPPER'S FARMER reader list of his area:

***"Careful inspection of the CAPPER'S
FARMER subscriber list shows that it is read
by most of the substantial farm families
in this area."***

Capper's Farmer

The Farm Magazine That Dominant Farm Families Heed

1,950

Hammer Blows

A MINUTE



Black & Decker No. 36
Portable Electric Hammer

—yet the Red Elastic Collar protects permanently against VIBRATION

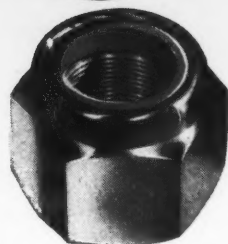
Vibration —from 1,950 sturdy hammer blows a minute—developed *two* problem spots on the No. 36 Black & Decker Portable Electric Hammer. *First*, where the nuts had to *lock in position* on top of the spring-loaded-pins. *Second*, where *prestressed* nuts had to hold the vibrating tool-retainer-yoke to the spring-loaded-pins. All types of conventional fasteners failed. ESNA Elastic Stop Nuts held permanently!—just as they have held permanently against vibration on other types of hammers for over fifteen years.

ESNA Elastic Stop Nuts are self-locking, easily removable, and reusable over and over. They protect permanently against Vibration, Corrosion, Thread Damage, Liquid Seepage and Costly Maintenance.

Here's a challenge: Send us complete details of your toughest bolted trouble spot. We'll supply test nuts—FREE, in experimental quantities. Or, if you want further information, write for literature.

Elastic Stop Nut Corporation of America, Union, New Jersey. Representatives and Agents are located in many principal cities.

ESNA
TRADE MARK



The RED ELASTIC COLLAR

—denoting an ESNA product—

...is threadless and permanently elastic. Every bolt—*regardless of commercial tolerances*—impresses (does not cut) its full thread contact in the Red Elastic Collar to fully grip the bolt threads. In addition, this threading action properly seats the metal threads—and eliminates all axial play between bolt and nut threads.

All ESNA Elastic Stop Nuts—*regardless of size or type*—lock in position anywhere on a bolt or stud. Vibration, impact or stress reversal cannot disturb prestressed or positioned settings.

ELASTIC STOP NUTS



INTERNAL
WRENCHING



ANCHOR



INSTRUMENT
MOUNTING



SPLINE



CLINCH



GANG
CHANNEL



CAP

PRODUCTS OF: ELASTIC STOP NUT CORPORATION OF AMERICA

How do your new cars look



Let prospects SEE...through a **VISUAL FRONT**

The Visual Front gives the green light to seeing ... puts more sales punch in your display room.

Through its large area of clear glass, your cars catch the eye of passers-by.

Today, this desirable showroom feature is more practical than ever, thanks to *Thermopane**, the L·O·F transparent insulating unit. *Thermopane* provides year-round insulation against cold and heat. And the dehydrated air hermetically sealed between its panes of glass greatly reduces the possibility of condensation or frosting on the glass.

To emphasize the mammoth showcase effect,

use doors of clear *Tuf-flex**, the heat-strengthened glass with amazing resistance to impact. For lasting color and extra sparkle, make the bulkheads and trim of *Vitrolite** structural glass. Employ mirrors to "enlarge" the appearance of your display room.

The Visual Front is practical, too, for glass doesn't need refinishing. It stands up to years of weathering without harm to its lustrous finish, and cleans to its original beauty.

Write for our colorful, illustrated Visual Front book. Libbey-Owens-Ford Glass Company, 4146 Nicholas Building, Toledo 3, Ohio.

*Reg. U. S. Pat. Off.



LIBBEY · OWENS · FORD
a Great Name in **GLASS**

Protect your brake jobs with Eis Products

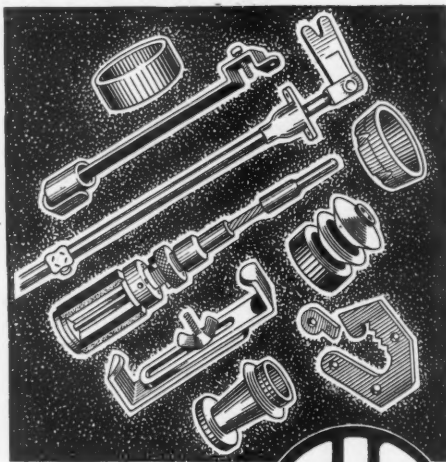
BRAKE repair is the one branch of car overhaul that demands an absolutely "safe" job.

That is why so many leading brake stations have standardized on the Eis Line. Eis Brake Parts and Cables have established a nation-wide reputation for dependability over the long distance route. Their past performance record is a safeguard against failure and comebacks.

When you replace with Eis Products you protect your brake job—your customer—and yourself.

From your jobber.
Write us for literature.

THE EIS AUTOMOTIVE CORP.
MIDDLETOWN, CONN.



**BRAKE PARTS
BRAKE FLUID
BRAKE TOOLS**

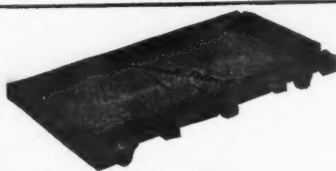
**THE LINE OF
DEPENDABLE
SERVICE**

THE WORLD'S FINEST INTERNATIONAL PARTS MUFFLERS

Continuous electrically
welded seams make
blow-outs impossible



Tested & Approved by
Underwriters' Lab.



Smash-Proof

CREEPERS

Sold by all leading jobbers
HULBERT MANUFACTURING CO.
Ashtabula, O.

Better than ever — RIMAC SPRING TESTER

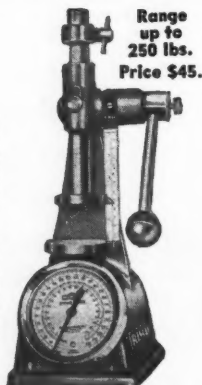
FOR VALVE AND CLUTCH SPRINGS

JUST out! The new Rimac Spring Tester, 1946 model. Many added improvements. Larger dial with easier-to-read numerals. Mechanism more sensitive. Smoother in operation. More rugged in construction.

Enables you to test all valve springs for correct and uniform tension, insuring top engine performance and elimination of fuel waste. Complete Valve Spring Tension Chart FREE with every Tester.

Used in production and recommended for service work by leading manufacturers of automobile, airplane, truck, and tractor motors.

RINCK-McILWAINE, INC.
16 Hudson St. New York 13, N. Y.



Range
up to
250 lbs.
Price \$45.

**Be
100%
With
10%
Buy
Victory
Bonds**

Model Changes

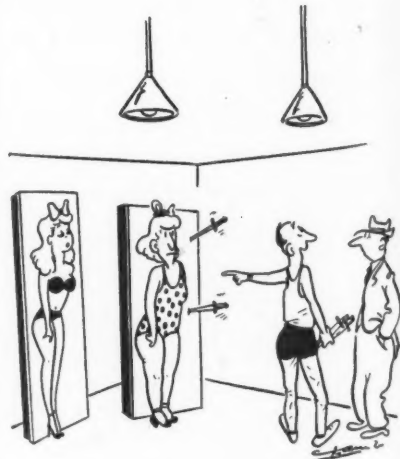
(Continued from page 98)

Dodge is not referring to its present model as the 1946 car, but as the "new Dodge." Still another manufacturer reports that his company has commitments for materials for present model runs that will carry through until next October.

Economically, there are very good reasons why the car companies do not intend to make model changes this year. In the first place, production so far has been so low that the break-even point still is a good way off. There has been no chance for them to amortize the heavy tool and die costs involved in getting production going, to say nothing of the terrific reconversion and overhead expenses suffered in the past few months of almost negligible production.

Production costs have been probably the heaviest in history and have come at a time when there is little hope to recover them through an adequate profit margin because of government-imposed ceilings. Another factor is that there really is very little justification for a model change anyway. The sole purpose in normal times is to spur sales. This does not exist today, with the public apparently willing to take all the cars the industry can produce this year, and it would be unfair to dealers and the public alike to pinch off the supply unnecessarily.

The problem of the supplier also has contributed materially to the apparent decision not to change models this year. So far it has been a struggle to maintain an adequate flow of many components to keep lines going, and any increase in schedules has been very slow indeed for this reason. A model change would require specification changes in many parts. This alone would complicate the parts supply situation worse than it is now.



"That's the model I use for practicing."

Tomorrow's Leaders are Training Today



THE sons and daughters of the American farmer . . . tomorrow's farmers . . . are training for their future as enthusiastically as any other youth in the land.

Children of Colossus of the Crossroads, these boys and girls are witnessing a revolution in farming. They don't harness their horsepower; they throw it into gear! They're planning for an even more efficient, and pleasurable, farm life. The 4-H Clubs and "Future Farmers of America" are evidence of their ambition and enthusiasm. In their zeal to improve the nation's agriculture, they look to Country Gentleman and its complete coverage of farm news for ways and means.

Country Gentleman considers it a vital part of its program to report regularly on 4-H and FFA activities . . . to offer inspiration and incentive to farm youth . . . to slant many special features toward these youngsters, month after month.

Country Gentleman's attention to tomorrow's farmers, these younger members of the family, is another reason why this magazine is considered a "must" on America's

top-half farms . . . the farms with over four-fifths of the national farm income.

Facts of Special Interest to the Automotive Industry:

"Farmers are desperate to drive home some new trucks and cars—maybe a billion dollars worth!"—Clinton Anderson.

The rural market accounts for 42% of all cars and trucks in the U. S.

Automotive dealers, by almost 3 to 1, vote Country Gentleman the most effective rural magazine in selling their customers.

Farmers' incomes have doubled in the last five years!

For the last ten years automotive manufacturers have invested more advertising dollars per issue in Country Gentleman than in any other magazine but the "Post".

Country Gentleman

NATIONAL SPOKESMAN FOR AGRICULTURE
A CURTIS PUBLICATION

AUTO MECHANICS LIBRARY



MECHANICS, STEP UP YOUR OWN SKILL with the facts and figures of your trade. Audels Mechanics Guides contain Practical Inside Trade Information in a handy form. Fully illustrated and Easy to Understand. Highly Endorsed. Check the book you want for 7 days' Free Examination. Send No Money. Nothing to pay postman. If satisfied pay only \$1 a month until purchase price is paid.

Get This Information for Yourself. Mail Coupon Today. No Obligation Unless Satisfied. ASK TO SEE THEM.

CUT HERE

MAIL ORDER

AUDEL, Publishers, 49 W. 23 St., N.Y. 10 Please send me postpaid for FREE EXAMINATION books marked (x) below. If I decide to keep them I agree to mail \$1 in 7 days on each book ordered and further mail \$1 monthly on each book until I have paid price.

☐ AUTO GUIDE \$4 ☐ MACHINIST BOOK \$4

Name _____

Address _____

Occupation _____

Employed by _____ AGE _____



WITH

MASTER RECAMS

MASTER RECAMS are individually designed for all into model cars; easily installed without removing pistons. The profitable way to Stop Piston Slap, Oil Pumping and Motor Noise.



50¢ EACH

REGULAR DISCOUNTS TO JOBBERS AND DEALERS

WHERRY ENGINEERING COMPANY
3227-29 Morganford Rd., ST. LOUIS 16, MO.

Textile Shortages May Wipe Out Tire Gains

Textile shortages seriously threaten to wipe out the tire industry's production gains for the first quarter of 1946 and carry further into next year the day when civilian tires will again be available in normal supply, according to reports by the Rubber Manufacturers Association. Some tire manufacturers are already threatened with curtailment of production for want of fabrics. Others, with only a small portion of the second quarter requirements in tire fabrics assured, foresee shutdowns by May 1 unless supplies of enameling duck, chafers, Osnaburgs and sheetings are materially eased.

With the automobile industry making heavier inroads into tire output for original equipment supplies, shutdowns resulting from a textile shortage could easily defeat the effort of rubber manufacturers to attain their goal—66 million passenger car tires this year.

The estimated demand is in excess of 66 million units, which means at least another season of close attention to all of the wartime tire conservation practices, the association said. This includes recapping of worn tires, careful inflation and moderate driving speeds, particularly in the hot-weather driving period in the months ahead.

New Inspection Chiefs Appointed by Bendix

With the resignation of C. J. Boyack as chief inspector and realignment of the inspection staff, Cecil E. Rodgers and Wayne E. Miller have been appointed chief inspectors of their respective sections of the Bendix Products Division, Bendix Aviation Corp., South Bend, Ind.

Wayne E. Miller, now chief inspector of the Automotive Section, will direct the inspection of Bendix brakes, B-K devices, and Bendix-Weiss universal joints. Cecil E. Rodgers, chief inspector of the Aircraft Section, will direct and supervise all inspection of landing gear, fuel systems, wheels, brakes, master cylinders, and allied parts.

USE PROVED IGNITION PARTS

QUALITY TELLS DEMAND WELLS

WELLS MFG. CORPORATION
FOND DU LAC, WIS.



ARROW SAFETY DEVICE CO.
MOUNT HOLLY, N. J.

Make Big Profits on Small Investment in

SHURHIT IGNITION PARTS



Ask your Shurhit jobber or write us for details on General Ignition Assortments of fast-moving parts...Contact Points...Condensers...Rotors...Caps...Coils...Switches, etc...complete in all-steel stock and display cabinet.

SHURHIT PRODUCTS, INC.
Waukegan, Ill.

Since 1897

UNITED STATES ELECTRICAL TOOLS

have never swerved from their original standards of **QUALITY AND SERVICE**

THE UNITED STATES ELECTRICAL TOOL CO.
CINCINNATI, OHIO

Ask about the

FOX

RAPID

BATTERY CHARGER

FOX PRODUCTS COMPANY
PHILADELPHIA 41, PA.



Distributed Exclusively Through Automotive Wholesalers

Wire Joe

AUTOMOTIVE CABLE
manufactured by
THE CRESCENT COMPANY, Inc.
Pawtucket, Rhode Island

**DID YOU GET
YOUR SHARE OF
THIS BUSINESS
IN 1945 ?????**

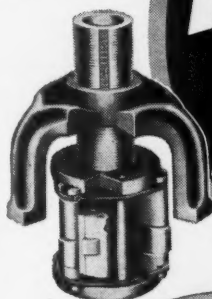
**4,701,000
COMPLETE
MOTOR
OVERHAUL
JOBS**

Above: HALL Model H Cylinder Hone. Wider range; faster cutting; finer finish.

Below: HALL Ring Ridge Reamer. Cuts fast, clean, smooth.

**1,753,000
CYLINDER
RECONDITIONING
JOBS**

Left: HALL Piston Pin Hole Hones make any mechanic an expert pin fitter.



1945 was an extremely profitable year for those shops with HALL Service Equipment because they were able to turn out more jobs—better jobs—in less time at less cost.

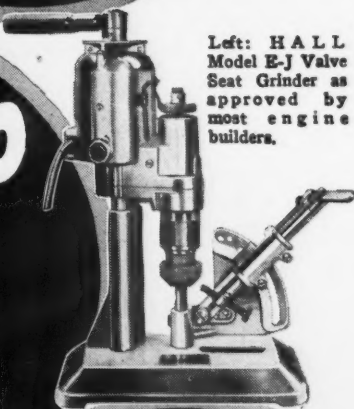
1946 bids fair to be an equally good year for these same shops.

To be sure you get your share of this big, profitable business this year, ask your HALL Jobber for the HALL equipment you need or write the factory today for complete information.

**THE HALL MFG. COMPANY
TOLEDO 7, OHIO**

**5,055,000
VALVE
GRIND
JOBS**

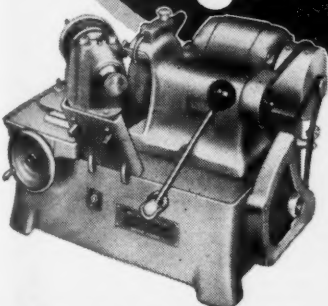
Left: HALL Model E-J Valve Seat Grinder as approved by most engine builders.



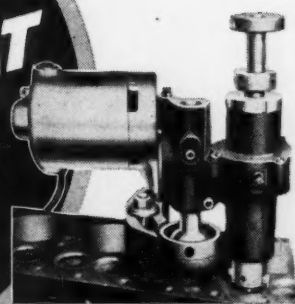
Figures quoted herein supplied by Motor Service Magazine.

Left: HALL Model M Valve Seat Insert. Counterbores, inserts and spins metal around seat for permanent installation. Also made for hand operation.

**752,000
VALVE SEAT
INSERT
JOBS**



Above: HALL Model 80 Wet Type Valve Refacer. Gives finest precision and finish.



HALL

CLUTCH FACINGS • RIVETS
BRAKE SHIM STOCK • RELINING EQUIPMENT
HYDRAULIC BRAKE PARTS • BRAKE FLUID

FIDO NEEDS SOUTHERN BRAKE LINING TOO!

HOP IN, MR. BUNNY—YOU'RE BOTH LUCKY. I'VE GOT SOUTHERN BRAKE LINING

SOUTHERN
FRICTION MATERIALS CO.—CHARLOTTE, N.C.

The Spot Life is on
KEX
TIRE PLUGS
The Perfect Puncture Seal for Synthetic and Natural Rubber Gasings. Three sizes meet all needs.

PAT. FEB. 9, 1941
KEX
REG. U.S. PAT. OFF.

The WEDLER-SHUFORD CO.
ST. LOUIS, MO.

Originators and Manufacturers of
**FLEXIBLE
HOSE ASSEMBLIES**

for Gasoline, Oil, Air, Water, Freon Gas, Carbon Dioxide and for both high and low pressure hydraulic lines.

FLEX-O-TUBE Company
Lafayette at 14th Avenue
Detroit 14, Michigan

SPINNING POWER

a Companion Product
of Full-Spark Plugs
GLOBE-UNION INC.
MILWAUKEE 1, WIS.



CAMPBELL
Lug-Reinforced
TIRE CHAINS

THE CHAIN WITH THE SAW-TOOTH GRIP
Greater Mileage Greater Safety
INTERNATIONAL CHAIN & MFG. CO., YORK, PA.

Moves to New Post

R. C. Peter is being transferred, effective April 1, as technical representative in automotive finishes from the Wilmington, Del., home office, E. I. duPont de Nemours & Co., to the Toledo, Ohio, area. He will be connected with the duPont automotive finishes office in the General Motors Building, Detroit, but will reside in Toledo.

New Floating Grease Retainer Developed

A new Tru-Torque Floating Grease Seal has been developed by Otto-Items, Inc., 4390 Olive St., St. Louis 8, Missouri.

This floating grease retainer incorporates an auxiliary bearing ring which fits and follows the shaft. Attached to the lip of the retainer, this bearing ring holds the lip in constant contact with the shaft regardless of shaft run-out or movement caused by wheel bearing play.

In the installation of this new retainer on an old shaft which might be worn or scored, the lip rests on a different location than the lip on the old retainer thus giving an entirely new sealing surface. Many grease retainer failures are caused by the worn surfaces against which new retainers are expected to seal.

Tru-Torque Grease Seals are now available through jobbers for use on rear wheels of Ford, Mercury, Lincoln-Zephyr and Studebaker Champion passenger cars.

**What you want
When you want it**

... Parts, Equipment,
Supplies, Machine
Shop Service ...

at your
**M-E-W-A Automotive
Wholesalers**



You Can Rely On FRENCHTOWN INSULATORS

Used by more spark plug manufacturers than any other.

FRENCHTOWN PORCELAIN CO.

81 Mulrhead Ave., Trenton, N. J.
(Factory: Frenchtown, N. J.)

**For Faster and
More Accurate
BATTERY TESTING**

IMPERIAL "K"
No. 515-T
BATTERY HYDROMETER

- ★ Thermometer Type
- ★ Shatterproof Glass Jar

ORDER FROM YOUR JOBBER

THE IMPERIAL BRASS MFG. CO.
1217 W. Harrison St., Chicago 7, Ill.



Bonney Forge & Tool Works
Allentown, Pa.

REBUILT GENERATORS and STARTERS also REWOUND ARMATURES For All Popular Make Cars

IMMEDIATE DELIVERY

We stock only original units. All generators rebuilt with rewind armatures.

Write for Price List D.D.

HASCO PRODUCTS, INC.

131 Park Ave. Lyndhurst, New Jersey

**HYDRAULIC BRAKE CYLINDER
CLEANER AND POLISHER**

Pat. No. 2348132

Muck and scale quickly removed and brake cylinder polished to a mirror finish in a few seconds. Eliminates wasteful outside trips. Does the entire job in your own shop.
\$3.25 FROM YOUR JOBBER

THE HYLAND MANUFACTURING COMPANY
818 John Street Portsmouth, Ohio

It is absolutely impossible for moisture,
air and dirt to get into hermetically-sealed

General Electric Sealed Beam Lamps...

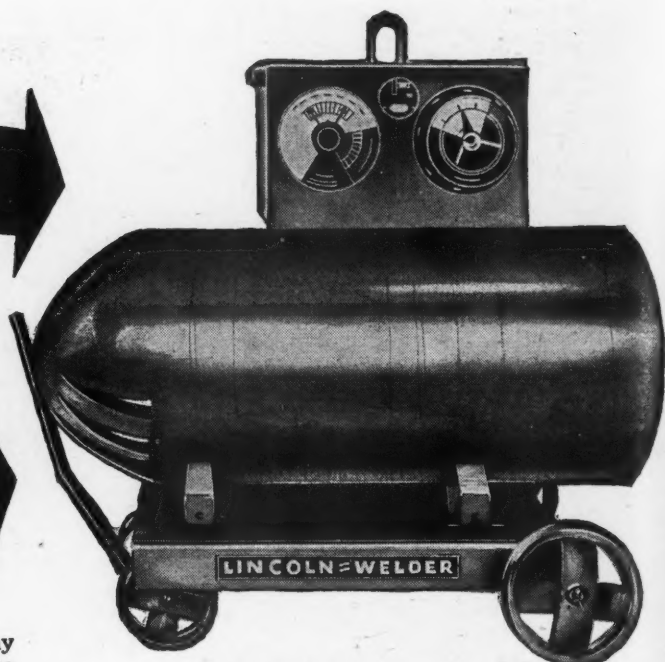
they *do not grow dim!*



G-E ALL-GLASS SEALED BEAM LAMPS

GENERAL  **ELECTRIC**

WELDERS



LINCOLN DC Type: 300 to 400 amperes

This and many other types and makes of welding machines and related equipment are available from war surplus.

Here is a chance to pick up arc welding equipment in any desired quantity at low cost. Large quantities of 300 to 400 ampere MG type welders—primarily of Lincoln and Hobart make—are available for sale. Largest inventories are in the Boston, Detroit, Cleveland, Chicago, Atlanta, Nashville, Houston and Philadelphia offices of War Assets Administration. They may be obtained, however, by contacting any of the War Assets Administration offices listed below. Equipment from 200 to 400 amperes in DC, gasoline-engine driven and AC sets are available in smaller quantities . . . also multiple operator types and related equipment such as electrodes, welding rods, weld positioners and flame cutters. Spot, seam and flash welders are likewise available. The equipment is for both production and construction. Write, wire or phone your War Assets Administration office today.

ALL ITEMS SUBJECT TO PRIOR SALE

TO WAR ASSETS ADMINISTRATION:

Please send me information on availability, condition and location of the following types of equipment:

- | | | | |
|--------------------------|-------------------------------------|--------------------------|--|
| <input type="checkbox"/> | HOBART ARC WELDERS | <input type="checkbox"/> | RESISTANCE WELDERS (spot) (seam) (flash) |
| <input type="checkbox"/> | LINCOLN ARC WELDERS | <input type="checkbox"/> | FLAME CUTTERS |
| <input type="checkbox"/> | WESTINGHOUSE ARC WELDERS | <input type="checkbox"/> | WELD POSITIONERS (capacity)..... |
| <input type="checkbox"/> |ARC WELDERS | <input type="checkbox"/> | WELDING ROD OR ELECTRODES |
| <input type="checkbox"/> | (other equipment) | | |

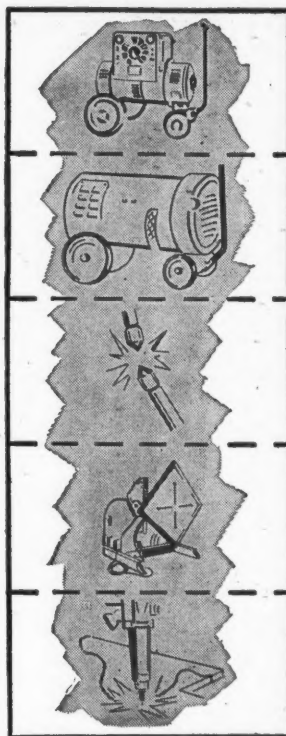
Name.....

Firm.....

Address

City State

176-1

**HOBART**

Standard models of this make available in large quantities and most ratings.

WESTINGHOUSE

Portable models available
in limited quantities.

RESISTANCE WELDERS

Spot, seam, butt and flash type welders for production operations—also portable or gun types.

WELD POSITIONERS

Many sizes and capacities, including head and tail-stock combinations.

FLAME CUTTERS

Both single and multiple torch types, portable and stationary.

VETERANS OF WORLD WAR II

To help you in purchasing surplus property, veterans' units have been established in each War Assets Administration Regional Office.

**OFFICES LISTED BELOW ARE TEMPORARILY IN
RECONSTRUCTION FINANCE CORPORATION AGENCIES**

Offices located at: Atlanta • Birmingham • Boston • Charlotte • Chicago • Cleveland • Dallas • Denver
 Detroit • Helena • Houston • Jacksonville • Kansas City, Mo. • Little Rock • Los Angeles • Louisville
 Minneapolis • Nashville • New Orleans • New York • Oklahoma City • Omaha • Philadelphia
 Portland, Ore. • Richmond • St. Louis • Salt Lake City • San Antonio • San Francisco • Seattle • Spokane
 Cincinnati • Fort Worth (Telephone 3-5381)



Now Carefree Brake-Sure Motoring *for All Your Customers*

Now that Inlite Brake Lining is back to full scale civilian production, you can again give *all* your customers the assurance of care-free brake-sure motoring.

You can give them better service because Inlite saves time two ways. It goes on faster — comes into normal operation at once, thereby eliminating time wasting call backs for readjustment.

Once you install Inlite you know that it's right, and *will stay right* to give positive pedal pressure

A General Motors Product



Available Everywhere Through
United Motor Service Distributors

for both men and women drivers. You know, too, that every Inlite segment has the same uniformity of structure — the same long wear factor that assures straight-line stops over a longer life. No grab, slip, chatter, or score!

Inlite is approved and used as original equipment on many 1946 cars.

**INLAND MANUFACTURING
DIVISION**

General Motors Corporation
Dayton, Ohio

★ INLITE ★

BRAKE LININGS



STOP SLIPPING ACCIDENTS



**Reduce
FIRE HAZARDS**



Use

OIL-DRI

REG. U. S. PAT. OFF.

(Absorbs all types of oils and greases)

OIL-DRI

ALL-PURPOSE
REG. U. S. PAT. OFF.

(Absorbs all types of oils, greases and acids, plus water and soluble oil solutions)

The regular use of OIL-DRI and OIL-DRI-(All-Purpose) is the best and easiest way to prevent hazardous accumulations of oil and grease around equipment, on shop and garage floors and in service driveways. It keeps floors dry and skid-proof.

Order from your local
OIL-DRI Distributor today



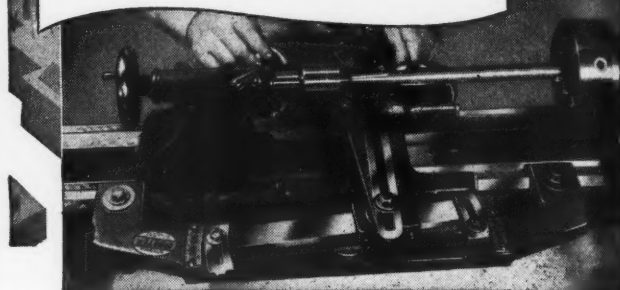
Oil-Dri Corporation

OF AMERICA

5036 N. RAVENSWOOD AVE., CHICAGO 40, ILL.

Ingenious New Technical Methods

To Help You with Your
Reconversion Problems



Simplified Master Taper Attachment Fits All Types of Lathes Instantly!

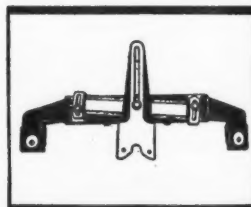
Now! A "universal" taper attachment that fits all lathes, old or new, big or small—that can be attached or removed in *minutes*! This taper attachment is not bulky or cumbersome. It bolts easily to the bed, in the back of any lathe.

The Master performs accurate taper turning, boring and threading with the ease of any straight line tool operation. It precisely duplicates any tapered part. Is usable in any position. Does not interfere with straight turning. The bar is precisely machined and fitted. There is no vibration. Taper graduations are in inches at one end; degrees at the other. The master is available now, in two sizes; two feet and four feet in length.

Available today also, is delicious Wrigley's Spearmint Gum. This is one treat you can enjoy even when your hands are busy. And the pleasant chewing helps to keep you alert and wide-awake, even through a monotonous job.

Chewing Wrigley's Spearmint satisfies a fellow. In addition, it helps keep your mouth moist and fresh—so you feel better. And feeling better, you naturally work better. By making gum available to all, scores of plants and factories report increased morale and efficiency that really pays off.

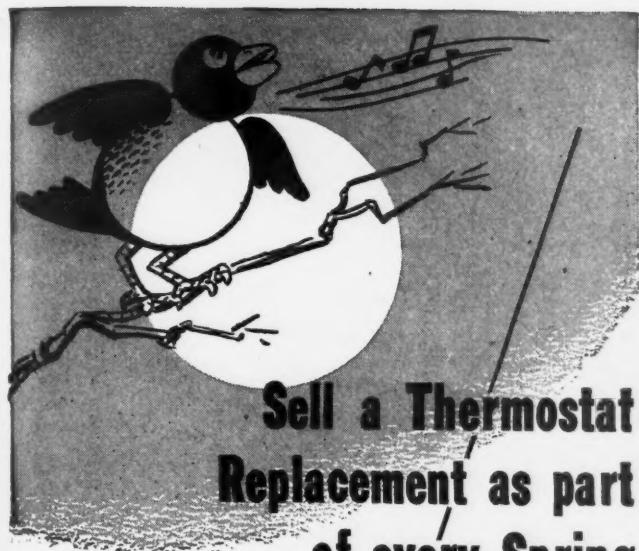
You can get complete information from the Keene Electrical Machinery Co., 549 W. Washington Blvd., Chicago 6, Ill.



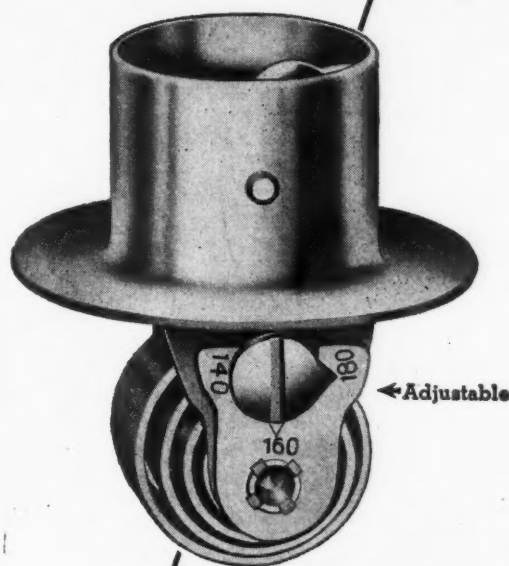
Model 710
Master Taper Attachment



AA-64



**Sell a Thermostat
Replacement as part
of every Spring
Motor Tune-Up**



←Adjustable

DOLE

Replacement THERMOSTATS

After winter driving, a thorough motor tune-up is vital for aging cars—and, today, that means ALL cars. In every case suggest a Dole Replacement Thermostat to save gasoline and oil—reduce motor wear—give quick warm-up and improved performance.

THE DOLE VALVE COMPANY
1901-1941 Carroll Avenue, Chicago 12, Illinois
Representatives in Principal Cities



Fitzgerald Gaskets

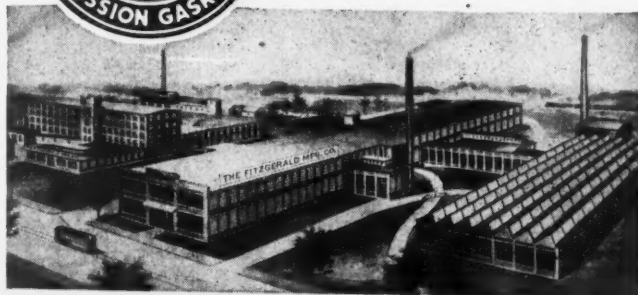
Modern motors put exceptionally heavy burdens on gaskets. For maximum performance, it is now more important than ever that gaskets do a thorough job of tight sealing.

The materials, design and workmanship in Fitzgerald Gaskets are your guarantee of customer satisfaction. And selling these gaskets is a sure way to extra profit.

Contact your Fitzgerald jobber for service.



The Fitzgerald Manufacturing Company, Torrington, Conn.
Branches, Chicago and Los Angeles—Canadian FITZGERALD, Limited, Toronto.



FITZGERALD GASKETS

THE COMPLETE LINE THAT COMPLETELY SATISFIES

Finest of the Fine



**AMERICA'S
PEACE-TIME SERVICE MAN**

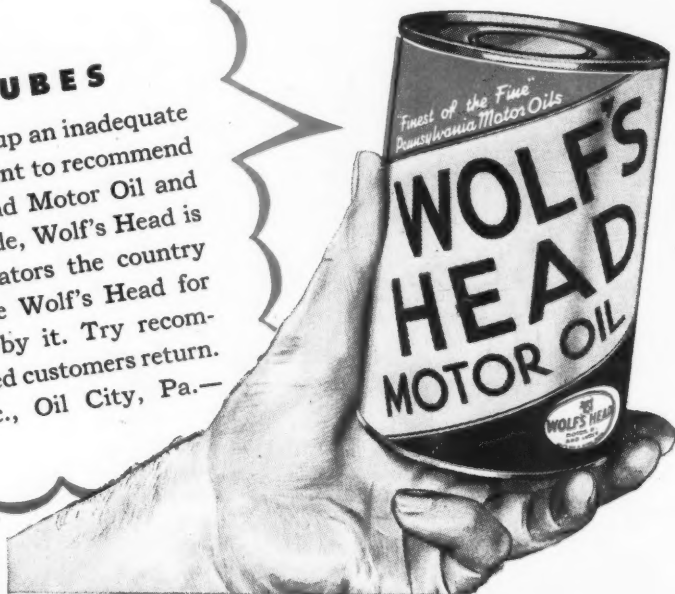
No doubt about it. America's Service Men are tops. The number of cars on the highways—after years of no new cars—proves it. Spotting troubles before they start, advising customers when and what repairs are necessary, the Service Man performs a function as valuable, in its way, as that of the family doctor. Wolf's Head salutes you.

QUALITY PRODUCTS *plus* QUALITY SERVICE

**WOLF'S HEAD
MOTOR OIL AND LUBES**

Since no amount of good service will cover up an inadequate oil or lube, many service men make it a point to recommend only the "finest of the fine"—Wolf's Head Motor Oil and Lubes. Made of 100% Pennsylvania Crude, Wolf's Head is the choice of bus and truck fleet operators the country over. Aircraft engine manufacturers use Wolf's Head for crucial block tests. Car drivers swear by it. Try recommending Wolf's Head yourself... satisfied customers return.

Wolf's Head Oil Refining Co., Inc., Oil City, Pa.—
New York 10, N. Y.



**WOLF'S HEAD
MOTOR OIL AND LUBES**

100% PENNSYLVANIA



P.G.C.O.A. Permit No. 6

Fast, Positive Action Counts in
Making Vulcanized Repairs!

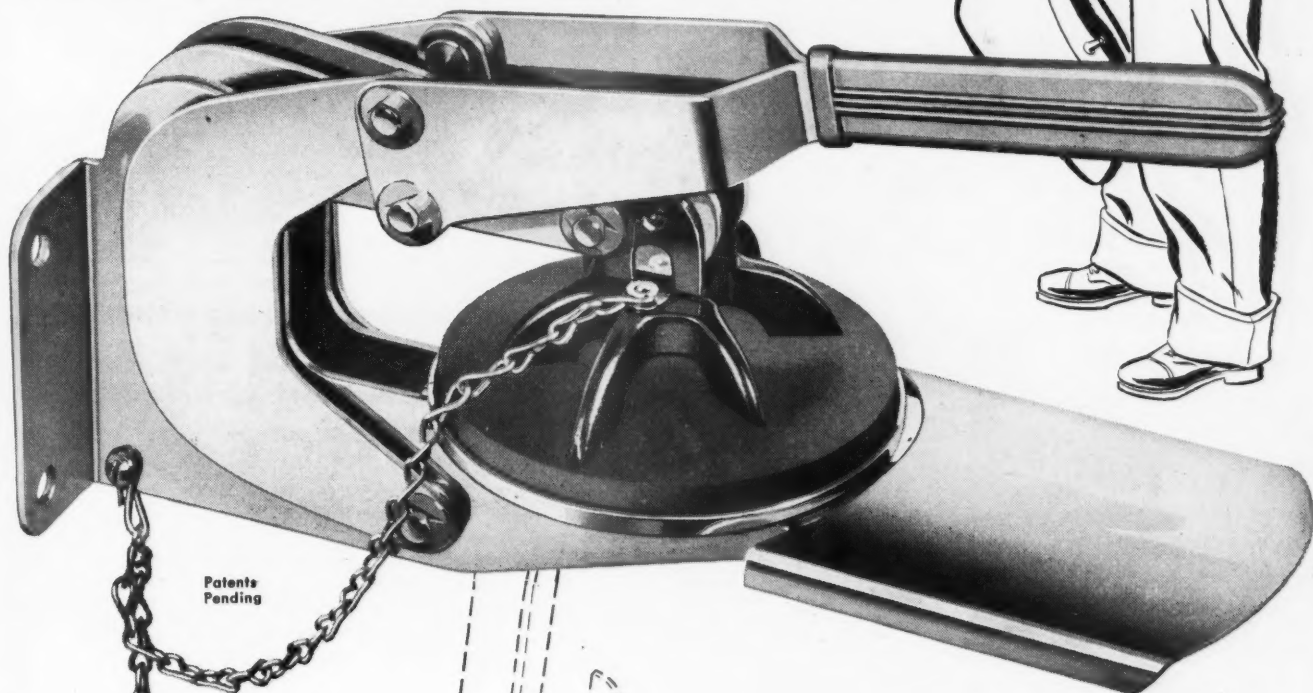
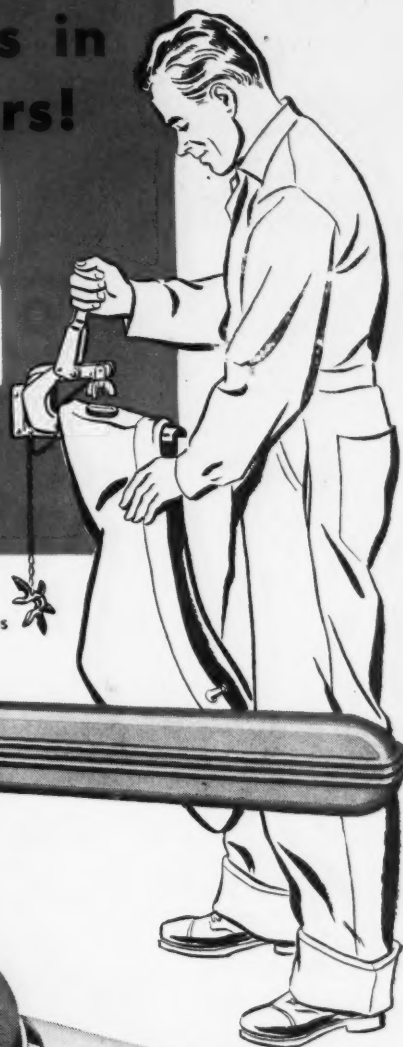
SPEAKER

Match Patch Vulcanizer

Provides Accurate, Predetermined Pressure

For Any Patch . . . For Any Tube Repair

Large Round Patches • Large Oval Patches • Small Round Patches • Small Oblong Patches • Replacement Valves



Patents Make Jobs



NO guesswork! One downward pull on the lever sets **AND LOCKS** the pressure pan for an unexcelled leather-edge **MATCH PATCH** repair of any puncture. Time-saving, dependable, it's like an extra man in your shop.

The **SPEAKER MATCH PATCH VULCANIZER** doesn't depend on the operator's strength or judgment for correct pressure. No screw to turn, no guessing as to the amount of force needed. Pressure is predetermined by compensating wings and toggle action.

This all steel vulcanizer is sold with a complete assortment of **MATCH PATCHES** and valves for 65 top-quality tube repair jobs of every type. See your jobber, or write today.

**SPEAKER TIRE REPAIRS
SPEAK WELL FOR YOU!**

J. W. SPEAKER CORP.

3059 N. WEIL ST., MILWAUKEE 12, WISCONSIN

APRIL, 1946

When writing to advertisers please mention Motor Age

161

**WORTH
LOOKING
INTO!**



If you are not already familiar with this old, reliable line of standard replacement parts, ask your Jobber for details. It will pay you to use "MASTER" parts.

FRONT WHEEL BEARINGS
CLUTCH RELEASE BEARINGS
WATER PUMPS (exchange)
WATER PUMP KITS
TIE ROD ENDS
PISTON PINS
FUEL PUMPS and REPAIR KITS
HYDRAULIC BRAKE PARTS and KITS

Many Other Parts for Cars and Trucks.

JOBBER: Your orders will receive immediate attention. Write Dep't B for catalogs and prevailing price schedules.

**A
DEPENDABLE
MANUFACTURING
SOURCE OF
SUPPLY**

CHEFFORD MASTER MFG. CO., INC.
(DEPT B.)
FAIRFIELD, ILLINOIS

GIVE RUST! THE "BRUSH OFF" WITH METALPREP 79-V



Prewar Formula

• Yes, literally brush it off; that's what you can do with Metalprep 79 on your refinishing jobs. Assure a better paint finish. It's simple. Just BRUSH ON, SCRUB, WIPE OFF.

Ask your jobber or write for Bulletin 44-5.

JOBBER: Add profits with Metalprep

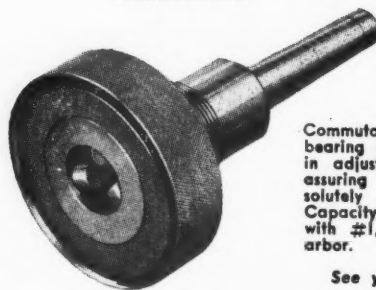
NEILSON CHEMICAL CO.

6568 Benson St., Detroit 7, Mich. • Windsor, Ont. • Los Angeles, Calif.

TRUCUT

TAILSTOCK REST for LATHES

THOUSANDS in active use today. Accurate, self-centering, the perfect tailstock chuck for supporting armature shafts while machining commutators.



Commutators are machined with bearing surfaces of shafts riding in adjustable bronze jaws, thus assuring commutators being absolutely concentric with shafts. Capacity— $\frac{1}{4}$ " to 1". Furnished with #1, 2, or 3 Morse taper arbor.

See your jobber or write

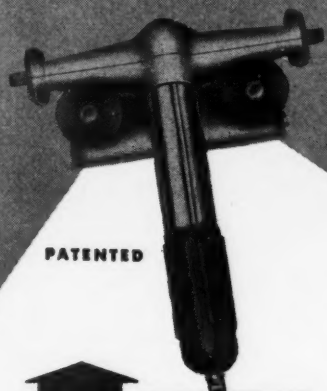
FRANK N. WOOD CO.

TRUCUT
Armature Lathes & Undercutters

342 W. MAIN STREET • WAUKESHA, WIS., U. S. A.

PACIFIC COAST ADDRESS: 1240 S. FLOWER ST
LOS ANGELES 15, CALIF.





PATENTED

Spreader hangs on wall bracket when not in use. Always ready; connects to any air hose. Hooded light shines into casing.

PRICE

\$24⁸⁵

Complete with wall bracket, rollers and light socket. Order yours **TO-DAY!**

WRITE FOR NEW ILLUSTRATED BULLETIN

Now! INSPECT TIRES IN ONE MINUTE

WITH A

Char-Lynn AIR POWERED TIRE SPREADER



Quarter turn of handle shoots Char-Lynn Tire Spreader arms open . . . spreads tire 11" for quick, easy examination or repair. Makes it easy to show customer condition of old tire . . . handy for demonstrating features of new tires.

KEEPS TIRE OFF FLOOR

Tire rotates easily on roller wall bracket at convenient height. Hooded light floods inside of tire. Saves space, lets you do a good job fast.

THE *Char-Lynn* COMPANY

2851 26TH AVENUE SOUTH • MINNEAPOLIS 6, MINNESOTA

Methods by *Mystik*



Problem—To quickly spray-paint designs, insignia, etc. on products. Eliminate costly hand-lettering and imperfect stenciling. Speed production.

Solution—Mystik SPRA-MASK sticks to surface, permitting clean-cut designs and one-man operation. SPRA-MASK delivered die-cut as needed. Cuts costs.

FREE—Sample of SPRA-MASK and literature on how Mystik Methods can cut costs for you. Write —Mystik Adhesive Products, 2640 N. Kildare Ave., Chicago 39, Illinois.

MYSTIK
Self-Stick
ADHESIVE PRODUCTS

"ANYTHING THAT STICKS"

Profitable Welding

WITH EASY TO OPERATE

TRINDL Super
Industrial ARC WELDERS
DEPENDABLE EVERY TIME!



● Trindl Super Industrial Arc Welders are especially designed and constructed for low-cost, high speed maintenance and production welding, where ease and speed of operation are essential.

● "Job-Tested" Trindl Welders—acclaimed for superior performance, ruggedness, dependability, and economical operation wherever used—are rolling up impressive production records.

● Trindl Arc Welders are the result of many years of careful engineering and "job-tested" research, and are manufactured in a range of distinctive sizes to accommodate every type of shop and production welding job.

● Step up production schedules twenty to forty percent—with an easy-to-operate TRINDL SUPER INDUSTRIAL ARC WELDER . . . also to save both time and money there are TRINDL welding supplies, accessories, and electrodes. Write, wire or . . . phone for full details.

TRINDL PRODUCTS, Ltd.
17 E. 23rd St. MA
CHICAGO 16. ILLINOIS



TRUCK TROUBLE INSURANCE

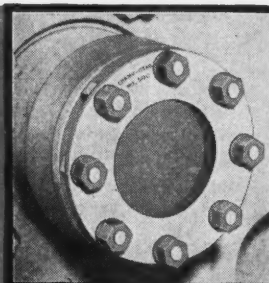


Lock all studs together as one unit, provide the extra bearing, stop rock at tip and your stud troubles are over.

REAR AXLE STUD LOCKING RINGS

FOR ALL POPULAR TRUCKS

CHAMP-ITEMS, Inc. 6191 MAPLE AVE., ST. LOUIS, MO.



Place lock ring against hexagon nuts and use lock washers and hexagon nuts furnished with kit. Draw up tight.



RED ARROW installation on knee-action car. Red Arrow fits cars with knee action—with regular axles—and with coil spring suspension in rear —ALL cars with two full bumpers. Red Arrow provides positive steering of the towed car by means of cables.

Leading automobile manufacturers, national transport companies, car dealers, car renters, and finance concerns use Red Arrow for ONE-MAN towing. It tows cars easily over long or short hauls —backs up both cars at will. Red Arrow is the ONLY bar that offers all of these advantages—the only bar that is self-aligning. Red Arrow is light to handle, easy to carry, dependable to use.

Write for complete information. Jobbers' stock orders shipped promptly.

GUARANTEE—Any part or parts of the Red Arrow Tow-Bar returned to our factory and found defective in material or workmanship will be replaced without charge, F.O.B., Ypsilanti, Mich. We shall in no way be liable for damage incurred in the use of Red Arrow Tow-Bar.

WOOD - WILLIAMS - COPP MFG. CO., 5239 MICHIGAN AVE. PHONE YPSILANTI 1384-W2 YPSILANTI, MICH.

Also Manufacturers of the Trailer Dolly and Truck Saddle Mount

Keep your BITS and WRENCHES Handy



HALL-Well
SOCKET WRENCH KIT
with interchangeable sockets



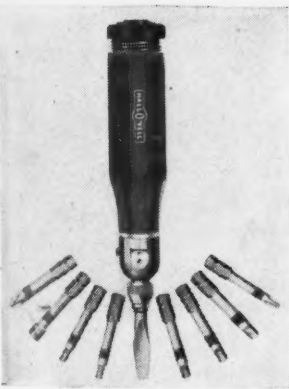
HALL-Well
AUTO KIT
with interchangeable bits



HALL-Well
SOCKET WRENCH KIT
with interchangeable sockets

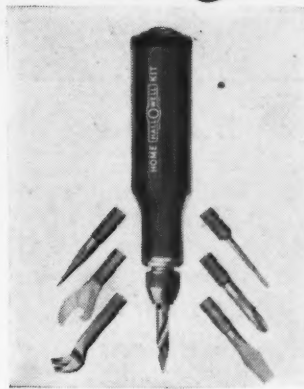
Molded Celanese Plastic Handles

USE HALL-Well SPEED TOOL KITS



SOCKET SCREW KIT

Socket Screw Kits (in two sizes) . . . contain interchangeable bits for driving almost any type screw. Hex bits, ranging from 1/16", increasing by 1/32 of an inch, up to 5/16"; a Phillips bit and a flat bit.



HOME KIT

Home Kit . . . the handiest kit imaginable. Contains flat screw drivers (1/16" and 1/4" wide), Phillips screw driver, square tapered reamer, gimlet, tack lifter and bottle cap opener. You'll find it indispensable.

Hollow handles hold interchangeable bits necessary to auto maintenance. They have *swivel bit-chucks* for better leverage and reaching difficult places. Tool bits are made of the finest *alloy steel*; handle of the famous durable *Celanese* plastic. The right combination for a rugged, useful product.

Auto Kit #20, with swivel head drive, contains 7 tools: 2 flat screw drivers: 1/4", 3/32"; Tapered Reamer (3/16" across corners); #1 and #2 Phillips; 2 clutch head bits: 5/32", 1/8".

Auto Kit #40, with swivel head drive, contains 8 tools: 2 flat screw drivers: 3/16", 5/16"; Tapered Reamer (5/16" across corners); #2 and #3 Phillips; 3 clutch head bits: 3/16", 1/4", 5/16".

Socket Wrench Kit #75 contains: 5 (12 point hexagon) sockets with openings: 1/4", 5/16", 11/32", 3/8", and 7/16". With 1/4" square drive.

Socket Wrench Kit #100 contains: 6 (12 point hexagon) sockets with openings: 3/8", 7/16", 1/2", 9/16", 5/8", 3/4". With 3/8" square drive.

Obtainable at Suppliers throughout the country. If your supplier does not carry these kits, send his name to us, along with yours and you will be taken care of promptly.

See our exhibit in Booths 326-328, at the A.S.T.E. New Era Exposition in Cleveland, April 8-12.



*Reg. U. S. Pat. Off

OVER 43 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA., BOX 561 • BRANCHES: BOSTON • CHICAGO • DETROIT • INDIANAPOLIS • ST. LOUIS • SAN FRANCISCO



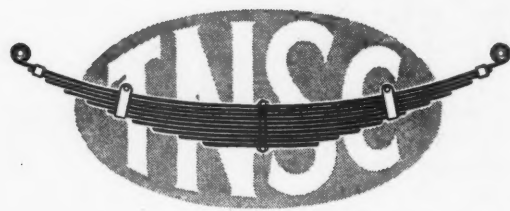
**ADD
TO THE**

Appearance
OF ANY CAR!

In ordering advise make, year and model of car.

BUELL MANUFACTURING CO.
2991 COTTAGE GROVE AVE., CHICAGO 16, ILL.

No. 530 Split, as shown



LEAF SPRINGS

for

*All Passenger Cars
Trucks, Trailers, Busses
Special Shaped Forms*

TRAINOR NATIONAL SPRING CO., INC.
New Castle, Indiana



New! Electrical Repair Kit

- Underwriters Approved. Quality Tool for a Complete Job
- Each Kit Contains Tool, Terminals and Instruction Sheet
- For Automotive Mechanics and Garagemen, Electrical Workers and Repairmen... for Farmers, Home Owners, etc.

The AMP method of solderless wiring makes obsolete all the messy paraphernalia of solder iron, flux and solder pot. Using only the AMP tool, anyone can attach an AMP terminal to wire to make a sound positive connection... a connection that carries all the charge the wire carries.

All in One for a Complete Job

Simple Pressure Tool Easily Attaches Terminal... No Solder Mess... No Failures from Use of Solder. This Handy Kit Contains Everything for a Fast, Accurate and Professional Job. Contains: AMP Tool which cuts wire, strips insulation and attaches terminal to wire; Package of 100 AMP all-copper Terminals, and Complete Instruction Sheet.

If Your Jobber Can't Supply You Write Us Direct.

LYNN PRODUCTS COMPANY, Inc.
319 East Ontario Street, CHICAGO 11, ILL.



It's New

Original

*Exclusive
Features*

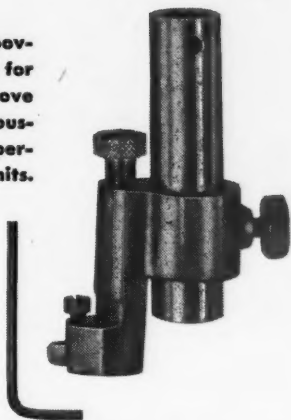


Fast charging in car... attachment for slow charging up to 10 batteries... detects sulphation and predicts battery failure... simple to operate... more profits from battery charging... more replacement sales.
For details get catalog.

KATHANODE CORPORATION
1253 First National Bank Bldg., St. Paul 1, Minn.

BIG, STEADY PROFITS

With this lathe-cutting regrooving tool. Only patented tool for removing pits from race groove of Delco-Remy distributor housing, where spark advance operates in ball race, as in GM units. Model 1500-B.



Renews race concentric with shaft. Corrects common ignition faults like "stumble," uneven idling, and high-speed miss. Distributor is not taken apart. Clamp shaft in vise and mount tool arbor (accommodating 6- and 8-cyl.) on rotor support. Feeding cutter (standard 1/4") .001" at a time, turn housing till pits are removed. At same time install a Lanagan stainless steel ring, SS-250-6 or SS-250-8, complete with standard 1/4" balls; clip screws; washers.



LANAGAN AND HOKE
Philadelphia 44, Pa.

PRECISION AUTOMOTIVE TESTING EQUIPMENT

No Tester Gives you SO MUCH for the Money as the

"KING" MT-795

This organization is a pioneer in the manufacture of Testers and Battery Chargers. Down through the years "KING" Testers have been noted for their efficiency. Another important factor is that "KING" Testers give you the very most for your money. The "KING" MT-795 is an outstanding value. It has several new improved features that contribute to efficient operation. It will make all motor and ignition tests — it has the "KING" all electric patented Spark Plug Tester and the "KING" patented Cam Angle Tester. It is a lot of tester for the money.



"KING" MT-795

Ask Your Jobber or Write Us

The ELECTRIC HEAT CONTROL Co.
9123 INMAN AVENUE • CLEVELAND 5, OHIO
GOOD "KING" PRODUCTS SINCE 1914



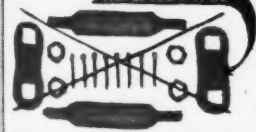
RUBBER SHACKLES

FOR FORD - MERCURY
CHEV. & PLYMOUTH

THIS SHACKLE



REPLACES THIS



Thoroughly tested through millions of miles of riding on hundreds of thousands of Ford and Chevrolet cars. Easily and quickly installed... a feature that appeals to all mechanics.

OUTSTANDING FEATURES

- Permits old cars to have that newer, quieter ride.
- Completely cushions and insulates frame from axle.
- Replace old, obsolete shackles.
- No lubrication required.
- Silent in operation.
- Easily and Quickly installed.

AVAILABLE FOR
Ford 1928-31, 1935, 1937-42
Chevrolet 1934-42, and other cars

Plymouth 1935-42 and Chrysler group

The rubber bushings are molded to correct size and properly cured for easy, perfect fit and long life. Write for Catalog Sheet.

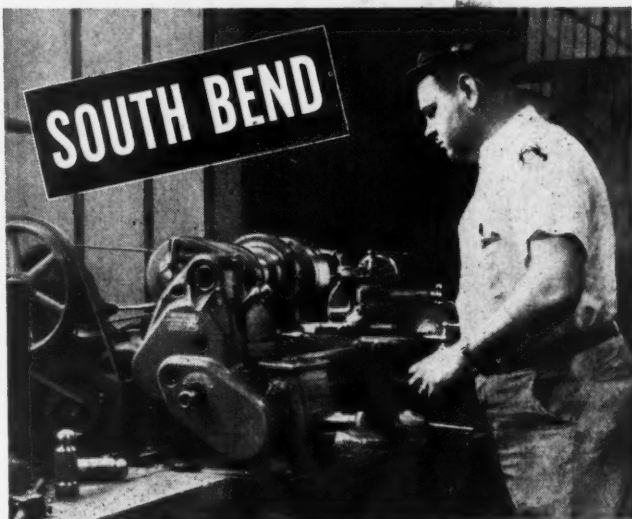
Available Thru Your Jobber

Other Fast Moving Items
Ready for Delivery

- WATER PUMPS AND KITS
- SOLENOID STARTER UNIT
- KING BOLT SETS
- SHOCK LINKS
- SPECIAL SERVICE SWITCHES, ETC.

AUTOMOTIVE MAN'G. Co., Inc.
1050 W. HUBBARD ST. CHICAGO 22, ILL.

SOUTH BEND



AN ESSENTIAL TOOL IN SERVICE-REPAIR SHOPS

Easy to operate, versatile, economical to own and to use, a South Bend Precision Lathe will increase shop profits for you by doing the dozens of precision machining jobs which are required in automotive maintenance and repair work. These versatile tools are made with 9", 10", 13", 14 1/2", and 16" swings, bed lengths up to 12'. Mention size in which interested when writing for illustrated catalog!



"HOW TO RUN A LATHE"
This valuable book will suggest many ways to solve service problems and cut maintenance costs. Price 25c postpaid, coin or stamps.

Lathe Builders Since 1906

SOUTH BEND LATHE WORKS
450 EAST MADISON STREET • SOUTH BEND 22, INDIANA



Klemm

GASOLINE FILTER

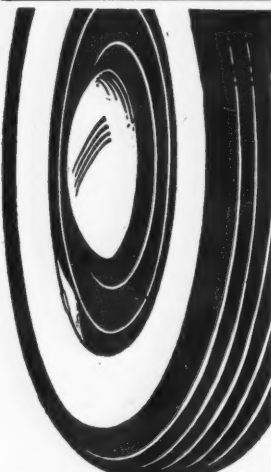
with the original
CONTROLLED POROSITY
Element



**QUICKLY INSTALLED
LOW IN PRICE
HIGHLY EFFICIENT**

Order From Your Jobber

KLEMM AUTOMOTIVE PRODUCTS CO.
1718 North Damen Avenue Chicago 47, Illinois



SNUGL

FAD-A-WAY AUTOMOTIVE WHEEL BALANCE WEIGHTS

TRUCKS • BUSES • PASS. CARS



PAT. NO. D-119-321
D-5189

FACTORY
MID-WESTERN AUTO PARTS
KOKOMO INDIANA

WESTERN DISTRIBUTOR
910 WEST PICO BLVD.
LOS ANGELES 15, CALIFORNIA

Edelmann

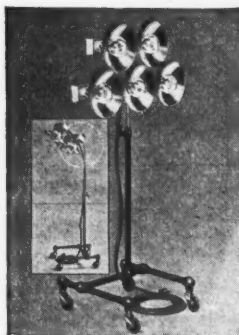


BRASS FITTINGS

"TOPS" for Quality
and Precision
for Over 34 Years
WRITE FOR CATALOG

E. EDELMANN & CO. CHICAGO ILLINOIS

FASTER, BETTER, CLEANER DRYING with NALCO Infra-Red DRYING UNITS



PORTABLE UNIT
Compact Nalco 5-lamp
portable, adjustable
unit.



**NORTH AMERICAN
Electric Lamp Co.**

1071 TYLER ST.

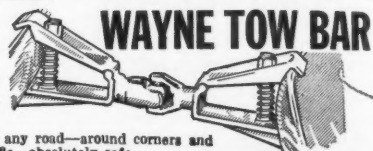
ST. LOUIS 6, MISSOURI

Get the details now—send for free copy
of "Factory Methods in Your Shop."

The radiant, penetrating heat of Nalco
Dritherm Infra Red units provide
speedy, uniform drying of auto fin-
ishes. Cuts drying time to a fraction.
Eliminates waiting time, reduces labor
cost. More jobs per day and greater
profits per job!

SAVE the Salary of an Extra Man with a WAYNE TOW BAR

One Man Drives, Tows
and Steers Both Cars!



- Attaches to any bumper, center or off center—fits 97% of all cars, including knee-action models.
- Towed car follows perfectly over any road—around corners and curves—cannot swing out in traffic—absolutely safe.
- Steering wheel of car being towed remains unlocked and unattended—ideal for four-wheel trailers, too!
- Slickest thing you ever saw! Your money back if not satisfied.

Saves
Time!

85c
F.O.B.

ORDER DIRECT—Supply is Limited

WAYNE HUB CAP REMOVER

One flip of handle and hub cap is off!
Prevents battering of hub caps and chipping of wheel paint.
Heavy steel—rust proofed—ABSOLUTELY GUARANTEED.
Lots of six—\$4.50

**Only
\$14.95
F.O.B.**

H. D. CAMPBELL CO., 357 6th St., Rochelle, Ill.

Hygrade Line

AUTOMOTIVE PRODUCTS

REPLACEMENT PARTS by HYGRADE



CARBURETOR AND FUEL PUMP
PARTS IN CONTAIN-ALL KITS
SHOCK ABSORBER PARTS
SPEEDOMETER CABLE, CASING,
TIPS AND SHAFTING
FUEL LINES AND FITTINGS

HYGRADE PRODUCTS CO., INC. • LONG ISLAND CITY 1, N. Y.

MOTOR HEADQUARTERS

IN NEW YORK

1 block from Automobile Row,
this modern 700 room hotel is
a favorite stopping place for
members of your industry.

Single \$3.00
Double \$4.50

**Hotel
WELLINGTON**
7th Avenue at 55th Street
A Knott Hotel

INSPECT-CORRECT THE MAREMONT WAY



MUFFLERS



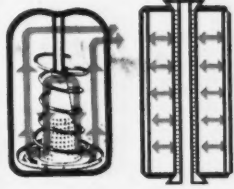
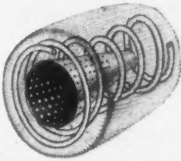
SPRINGS

MAREMONT has what it takes!

MAREMONT AUTOMOTIVE PRODUCTS, INC. • CHICAGO 8, ILLINOIS



If You were Designing an **OIL FILTER** . . .

| | | |
|----------|---|---|
| Q | <i>Wouldn't you want the filter material to stay at the same density, and not pack down?</i> |  |
| A | <i>In DeLuxe,* the supporting spring inside the cartridge answers that problem.</i> | |
| Q | <i>Wouldn't you want heavy tar and sludge to drop out, and not clog the filter cartridge?</i> |  |
| A | <i>The DeLuxe cone and sump meet that need.</i> | |
| Q | <i>Wouldn't you want the oil to travel the L-O-N-G way, for complete removal of asphaltenes and other contaminants BEFORE they form harmful sludge?</i> |  |
| A | <i>The diagram illustrates DeLuxe L-O-N-G oil travel versus short side-to-center travel.</i> | |
| Q | <i>When you renew cartridges, wouldn't you insist on the same construction, in order to get the same performance, instead of installing "cotton-wad" refills?</i> |  |
| A | <i>Every DeLuxe refill cartridge is built with cone-and-spring, to insure continued new-filter performance.</i> | |

Among men who Know Engines . . . the demand is for DeLuxe

That's why all 15 of the 15 winners of the latest National Bus Transportation Awards for Maintenance Efficiency operate DeLuxe-equipped buses. That's why fleets and individual units use DeLuxe the nation over. Owners, operators, dealers: Attend a DeLuxe Oil Clinic. Learn about

DeLuxe, about the new oils, about sludge—the most dangerous, and neglected, engine destroyer and gas-and-oil-waster today! Learn how the leaders prolong engine life and cut costs! Get nearest Clinic date from your jobber! . . . DeLuxe Products Corp. 1404 Lake St., La Porte, Ind.

DELUXE Oil Filter

DOES MORE THAN STRAIN OIL . . . MORE THAN FILTER OIL
ACTUALLY CLEANSES OIL

| | |
|--|----------------------|
| A C Spark Plug Div. General Motors Corp. | 2-77-95 |
| Ahlberg Bearing Co. | 64 |
| Air Reduction Sales Co. | 60 |
| Airtex Automotive Corp. | 9 |
| Allen Electric & Equip. Co. | 82 |
| Aluminum Co. of Amer. | 131 |
| American Brakeblok Div. | 106-107 |
| American Hammered Piston Ring Div. of Koppers Co. | Back Cover |
| Aro Equipment Corp., The. | 81 |
| Arrow Safety Device Co. | 152 |
| Audel & Co., Theo. | 152 |
| Automotive Mfg. Co., Inc. | 167 |
| Autopart Mfg. Co. | 92 |
| Autopulse Corporation | 115 |
| Barrett Equipment Co. | 121 |
| Black & Decker Mfg. Co. | 73 |
| Blackhawk Mfg. Co. | 85 |
| Blackstone Mfg. Co. | 171 |
| Blue Crown Spark Plug Co. | 65 |
| Bonney Forge & Tool Works. | 154 |
| Borg-Warner Corp. | 1 |
| Bowes "Seal Fast" Corporation | 137 |
| Buell Manufacturing Company | 166 |
| Campbell Co., H. D. | 168 |
| Capper's Farmer | 147 |
| Carter Carburetor Corp. | 143 |
| Casite Corporation | 49 |
| Central Equipment Co. | 130 |
| Central Tool Co., The. | 98 |
| Champ-Items, Inc. | 164 |
| Char-Lynn Co., The. | 163 |
| Chefford Master Mfg. Co., Inc. | 162 |
| Chicago Show Printing. | 163 |
| Chrysler Corp. | 63 |
| Circo Products Company. | 61 |
| Clemson Bros., Inc. | 130 |
| Country Gentleman | 151 |
| Crescent Company, Inc., The. | 152 |
| Deluxe Products Corp. | 169 |
| De Vilbiss Company, The. | 99 |
| Dodge Div. Chrysler Corp. | 134 |
| Dole Valve Co., The. | 159 |
| du Pont de Nemours Co., Inc. | 83-125-145 |
| Durkee-Atwood Co. | 96 |
| Edelmann & Co., E. | 168 |
| Egan Mfg. Co., H. B. | 124 |
| Eis Automotive Corp., The. | 150 |
| Elastic Stop Nut Corp. | 148 |
| Electric Auto-Lite Co. | 12-13-51-58-59-78-79 |
| Electric Heat Control Co. | 167 |
| Electric Storage Battery Co. | 55 |
| Emerol Mfg. Co., Inc. | 74 |
| Empire Electric Brake Co. | 69 |
| Ethyl Corp. | 11-66-67 |
| Everhot Products Co. | 112 |
| Fitzgerald Mfg. Co., The. | 159 |
| Flex-O-Tube Co. | 154 |
| Ford Motor Co. | 101 |
| Fox Products Company. | 152 |
| Fram Corporation | 105 |
| Freedom-Valvoline Oil Co. | 126 |
| Frenchtown Porcelain Co. | 154 |
| Gathe Corporation | 84 |
| General Electric Co. | 155 |
| General Finance Corp. | 142 |
| General Tire & Rubber Co. | 70-71 |
| Globe-Union, Inc. | 154 |
| Gray-Mills Corporation | 118 |

INDEX TO ADVERTISERS

This Advertisers' Index is published as a convenience, and not as part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert.

①

| | |
|--|------------|
| Hall Mfg. Co., The. | 153 |
| Hansen Mfg. Co., The. | 146 |
| Hartman Corp. of America. | 144 |
| Hasco Products, Inc. | 154 |
| Hastings Mfg. Co. | 2nd Cover |
| Hollingshead Corp., R. M. | 53 |
| Hotel Wellington | 168 |
| Hulbert Manufacturing Co. | 150 |
| Hygrade Products Co., Inc. | 168 |
| Hyland Manufacturing Co. | 154 |
| Imperial Brass Mfg. Co. | 154 |
| Inland Mfg. Div. | 157 |
| Inland Rubber Corp. | 129 |
| International Chain & Mfg. Co. | 154 |
| International Parts | 150 |
| Johnson Bronze Co. | 90 |
| K-D Mfg. Co. | 100 |
| Kathanode Corp. | 166 |
| Kerklings & Company. | 62 |
| King Quality | 119 |
| Klemm Auto Products Co. | 168 |
| Koppers Co., American Hammered Piston Ring Div. | Back Cover |
| Lanagan & Hoke. | 167 |
| Lee Co., K. O. | 68 |
| Lempco Products, Inc. | 54 |
| Libbey-Owens-Ford Glass Co. | 149 |
| Lion Auto Parts & Mfg. Co. | 76 |
| Logan Engineering Co. | 56 |
| Loney Co., Harley C. | 171 |
| Lynn Products Co., Inc. | 166 |
| McAleer Manufacturing Co. | 140 |
| Maremont Automotive Prod. Inc. | 168 |
| Marmon-Herrington Co., Inc. | 10 |
| Mid-Western Auto Parts. | 168 |
| Moog Piston Ring Co. Div. | 5 |
| Moog Industries, Inc. | 5 |
| Motor & Equipment Wholesalers Assn. | 154 |
| Mystik Adhesive Products. | 163 |
| National Automotive Parts Association | 110-111 |
| Neilson Chemical Co. | 162 |
| New York Air Brake Co., The | 109 |
| Niehoff & Company, C. E. | 116 |
| North American Electric Lamp Co. | 168 |

| | |
|---|-------------|
| Oakite Products, Inc. | 171 |
| Oil-Dri Corp. of Amer. | 158 |
| Pedrick Piston Rings. | 8 |
| Pennzoil Co. | 72 |
| Permatex Co., Inc. | 8 |
| Practical Products Co. | 88 |
| Pratt Industries, Inc. | 94 |
| Prest-O-Lite Battery | 132-133 |
| Puritan Company, Inc. | 86 |
| Purolator Products, Inc. | 141 |
| Ramsey Corporation. | Third Cover |
| Raybestos Div. | 123 |
| Resistoflex Corp. | 127 |
| Rinck-McIlwaine, Inc. | 150 |
| Rockville Vulcanizer Equipment Co., Inc. | 139 |
| St. Louis Spring Co. | 5 |
| Saturday Evening Post. | 102-103 |
| Schildmeier Co., H. C. | 14 |
| Schrader's Son Div., A. | 93 |
| Sealed Power Corp. | 16 |
| Service Supply Company. | 120 |
| Sheldon Machine Co., Inc. | 171 |
| Shurhit Products, Inc. | 152 |
| Siebring Manufacturing Co. | 122 |
| Sight Feed Generator Co., The | 80 |
| Snap-On Tools Corp. | 75 |
| South Bend Lathe Wks. | 167 |
| Southern Friction Materials Co. | 154 |
| Speaker Corporation, J. W. | 161 |
| Standard Motor Products, Inc. | 135 |
| Standard Pressed Steel Co. | 128-165 |
| Studebaker Corp. | 47 |
| Texas Company, The. | 4 |
| Timken Roller Bearing Co., The | 138 |
| Toledo Steel Products Company | 89 |
| Trainor National Spring Co. | 166 |
| Trico Products Corp. | 172 |
| Trindl Products, Ltd. | 163 |
| United Motors Service Div. G. M. | 87 |
| United Parts Mfg. Co. | 114 |
| United States Air Compressor Co., The | 136 |
| United States Electric Mfg. Corp. | 128 |
| United States Electrical Tool Co., The | 152 |
| Wagner Electric Corp. | 57 |
| Walker Mfg. Co. of Wis. | 6-7 |
| War Assets Corporation. | 156 |
| Warner-Patterson Co. | 108 |
| Wayne Pump Co., The. | 104 |
| Weatherhead Co. | 91 |
| Wedler-Shuford Co. | 154 |
| Weidenhoff, Inc., Joseph. | 15 |
| Wells Mfg. Corporation. | 152 |
| Wherry Engineering Co. | 152 |
| Wilkening Mfg. Co. | 8 |
| Willard Storage Battery Co. | 113 |
| Wiry Joe | 152 |
| Wittie Mfg. & Sales Co. | 97 |
| Wolf's Head Oil Refining Co. | 160 |
| Wood Co., Frank N. | 162 |
| Wood-Williams-Copp Mfg. Co. | 164 |
| World Bestos Corp. | 117 |
| Wrigley Jr., Co., Wm. | 158 |

QUESTIONS?

MAINTENANCE SHORT-CUTS
FOR SERVICE SHOPS



ANSWERS

Use 1 Material Only To Do These 4 Important Jobs

It's sound business to concentrate on a cleaning material that's deliberately designed to do a variety of shop maintenance jobs. You save storage space, you save time and you save money! That's why so many economy-wise shop superintendents keep on hand a supply of four-purpose Oakite Penetrant, particularly when they're faced with these four recurring jobs:

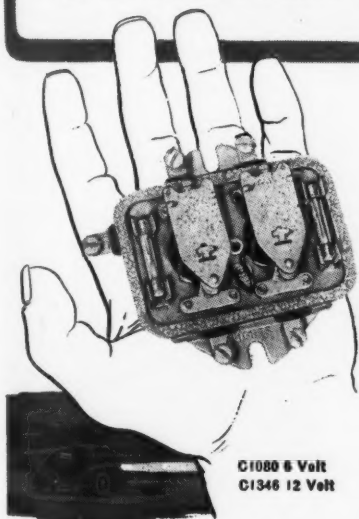
1. Cooling System Conditioning
2. Motor and Chassis Cleaning
3. Parts Degreasing
4. Floor and Work Pit Cleaning

There's an Oakite Technical Service Representative near you . . . why not allow him to put Oakite Penetrant through its paces on these four jobs in your shop? In the meantime ask us to send you a free copy of our descriptive 12-page booklet. Drop us a note today!

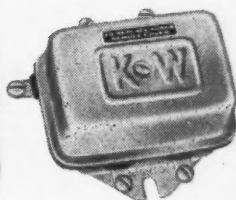
OAKITE PRODUCTS, INC., 24C Thames St., NEW YORK 6, N. Y.
Technical Service Representatives in All Principal Cities of the United States and Canada

OAKITE *Specialized* **CLEANING**
MATERIALS • METHODS • SERVICE

K-W STAN-TEST DUAL HEAD-LITE RELAY



Assures positive, dependable action; makes night driving far safer.



C1080 6 Volt
C1346 12 Volt

Fuses are enclosed in air-tight, water-tight case—can be installed at the best point for most effective use.

The K-W Stan-Test Dual Head-light Relay incorporates the most advanced electrical control design, giving the motorist more brilliant illumination for the clearest, safest vision possible. Packed individually

in sturdy, colorful box. Complete, easy-to-follow installation instructions in every box. The K-W Stan-Test Relay can be sold with the knowledge that you are offering a unit that has been built to the highest engineering standards.

THE K-W STAN-TEST CORPORATION
DIVISION OF
BLACKSTONE MFG. CO. • MORGAN & QUINCY • CHICAGO 7, ILL.

Where WILL YOUR 1946 EARNINGS COME FROM?

THEY'LL come largely from servicing the cars 4 years old or older—not the new 1946 models. So the longer you can keep the old ones from falling apart, the longer they'll keep coming in for repairs. One of the important things to do is to balance the wheels, thereby eliminating destructive vibration. It's a service that pays you well. Why not investigate?



HARLEY C. LONEY CO.
16893 Wyoming • Detroit 21, Mich.



SEND

for wall chart showing the pounding effect of unbalanced wheels.

**WHEEL
BALANCING WEIGHTS**

SHELDON PRECISION LATHES

from any angle, better lathes for turning small parts with precision, speed and profit.

Modern, lighter, faster, handier equipment. Rigidly built to hold its close accuracy under round-the-clock operation. Surprisingly inexpensive.



BOOTH 1831
A.S.T.E.
SHOW, CLEVELAND
APRIL 8th to 12th

(Illustrated)
Sheldon S-56
11 1/4" Swing
1" Collet
Capacity
56" Bed
Write for
Bulletin

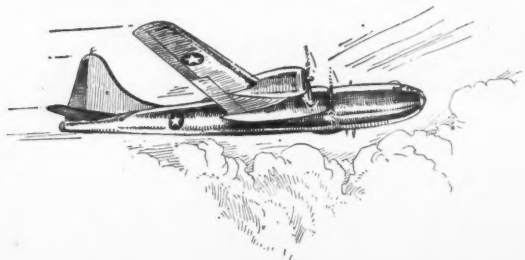
SHELDON MACHINE CO., INC.
4239 N. Knox Ave., Chicago 41, U.S.A.

APRIL, 1946

When writing to advertisers please mention Motor Age

171

The same force that keeps 'em flying—



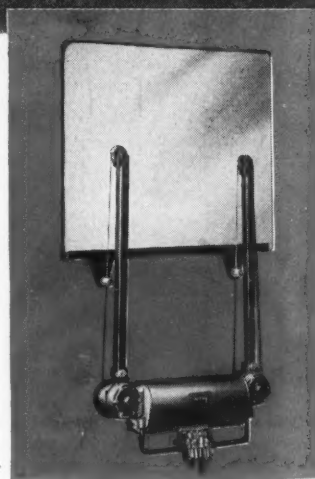
**CAN NOW FLASH
YOUR WINDOWS
UP OR DOWN**



● It's harnessed air power that gives an airplane its lift. It's harnessed air power which, with Lift-O-Matic, will raise or lower your windows in a split second.

Lift-O-Matic may be installed on all windows — or for economy's sake, only on the all-important driver's door. With it you merely flick a button — your hand hardly leaves the wheel — your eyes never leave the road — yet the window flashes up or down — part way or all the way as you wish.

In perfecting the Lift-O-Matic, Trico drew upon 25 years of experience in the manufacture of millions of windshield wipers and other mechanisms for safer, more comfortable driving. Provision for optional installation may be looked for in the car of tomorrow.



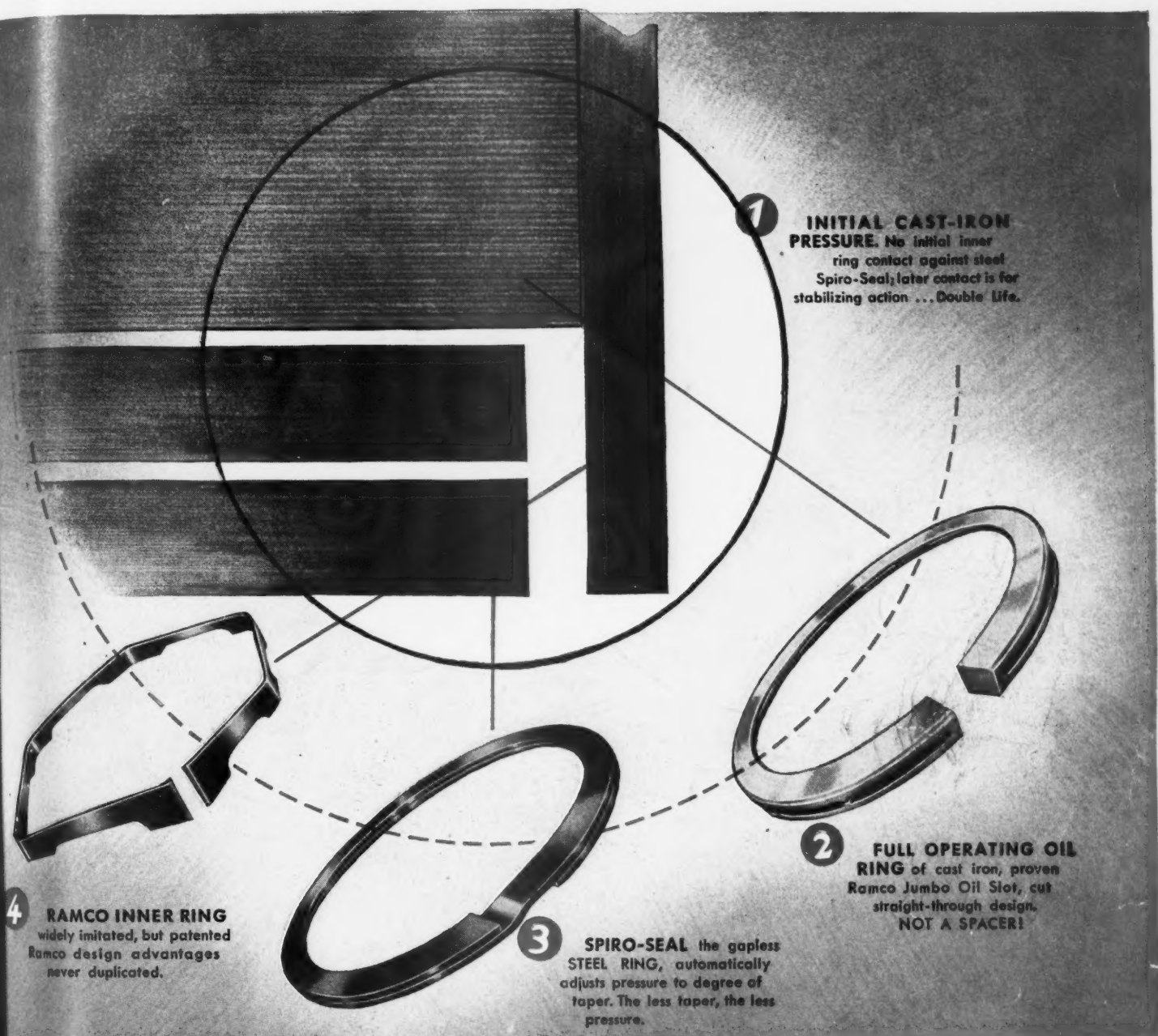
Completely Concealed
within the Car Door



Lift-O-Matic Harnessed Air Power

Touch Button Control of Motor Car Windows Trico Products Corporation, Buffalo 3, N. Y.

4 Reasons Why *it's* the ALL PURPOSE RING



No Other Ring like 10 Up!

The Ramco All-Purpose Piston Ring is the Culmination of twenty-five years of engineering pioneering and achievement! You may use it with confidence and equal success in any job ... re-bore or re-ring. Tens of thousands of

mechanics are doing just this ... have been doing it for many years! Ramsey Corporation, Forest Park Blvd., St. Louis, Mo. Factories at St. Louis; Fruitport, Michigan; Toronto, Canada.

RAMCO *10 Up* **RE-POWER** *Ring*

BEST FOR RE-POWERING ANY JOB...RE-BORE OR RE-RING... 10,000 MILE RING AND LABOR WARRANTY

Copyright 1946 by Ramsey Corporation
Trademarks Registered U. S. Patent Office



ENGINEERED TO

Match Any Job

From the hundreds of American Hammered combinations engineered specifically for the replacement field, American Hammered jobbers can supply the one right set of piston rings for *any* job—no matter what the degree of wear in any model of any engine.

Those to whom efficient engine performance is the only measure of piston ring value rate American Hammered the "ring leader". They rely on A-H rings in every size . . . of every type . . . for every purpose. They know that A-H sets match *any* job.

Koppers Company, Inc., American Hammered Piston Ring Division, Baltimore, Maryland

American Hammered Piston Rings

A KOPPERS PRODUCT